FOODS AND COOKERY
AND
THE CARE OF THE HOUSE

MARY L. MATTHEWS

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A Canning-club Winner

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AND
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FIRST LESSONS
FOR ELEMENTARY SCHOOLS

BY

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PREFACE

THIS volume is intended for use in classes beginning the study of foods and cookery. It has been arranged for use in the elementary schools and does not presuppose any training in general science. It is strictly an elementary treatment of the subject.

The book deals with foods, their selection and preparation, and the planning of meals from the nutritive, æsthetic and economic standpoints. The "meal plan" is used in order to make the meal the basis of the work. Through the "Home Problems" the home and school work may be correlated.

The author appreciates the help given in illustrating the book by the United States Department of Agriculture, the United States Bureau of Standards, the Detroit Stove Works, and the Chambers Manufacturing Company. The author also gratefully acknowledges the criticisms and suggestions of educators who kindly read the manuscript.

TO THE STUDENT

HAVE you thought about what you will do when you finish school?

Perhaps you have decided to be a teacher, a librarian, a stenographer, a doctor, a nurse. Perhaps you are making plans to take a course in high school or college that will fit you for one of these callings; you would not consider yourself capable of entering any of them without training.

Very probably you will be at some time the manager of a home. Have you thought about the importance of being trained for home-making?

It is only within the past twenty-five years that it has been considered proper for the public schools to train girls for the work which most of them will do for the longest period in their lives, the work of home-making.

Mrs. Ellen H. Richards was the first to say that the schools ought to teach "right living;" and, largely through her efforts and her inspiration, plans have been worked out whereby girls while in school can be taught many things about right living.

Right living begins with the home. Who makes the home? The man may furnish the money to build and maintain the house, but it is the woman who plans and manages the home. It is her business to see that the family lives in a sanitary and an attractive house; that every member of the family

has clean, properly selected and well cooked food; that every one is suitably clothed; that the family income is wisely spent, and that all in the home are helped to lead a happy and useful life.

No girl should consider the making and managing of a home an easy piece of work, for in fact nothing is harder to do and to do well.

When the girl takes work in school and college that covers all phases of home-making, we say that she is taking a course in Home Economics.

SUGGESTIONS

When planning a course in Home Economics for any school it is essential that the teacher should know from what kinds of homes the students come; what is the average income of the families of these girls; what nationalities they represent; what is the social life of the neighborhood. It is impracticable to follow any textbook, page by page, without first knowing whether the lesson-plans suit the students to whom they are presented. When the teacher knows the neighborhood, she can wisely select and arrange the parts of the book to be assigned.

In many cases the recipes outlined in this book should be changed; and in no case should they be used as presented when the teacher has recipes which she has tested and knows to be good, and which may be used to illustrate the principle that is under discussion.

The Foods and Cookery lessons are outlined on the meal basis, making the meal the project, while the lessons on various foods are the problems to be studied before the project is completed. It is desirable that the laboratory equipment should include dining-room equipment, but when that is not available, serving the meal on a supply-table or at the individual desks may be the plan used. In any case the girls should be urged to try the work at home, making reports on the work done.

Lessons on the house and its care are correlated with the other work whenever possible.

The book is divided into sections instead of lessons, thus giving the teacher the opportunity to use as much or as little as is desired at any one time, since the amount of time allowed for Home Economics varies greatly in different schools.

The "Home Problems and Questions" may furnish material for lessons if plenty of time is allotted to this course, or may be used only as work to be done outside of class hours.

Illustrations and exhibit material that can be secured will help to make the work more interesting. The following firms furnish "school exhibits" that will be found useful: E. C. Bridgman, 61 Warren St., New York City, meat charts; Hershey Chocolate Company, Hershey, Pa., chocolate products; Diamond Crystal Salt Company, St. Clair, Mich., folder showing how salt is prepared; Pillsbury Flour Mills Company, Minneapolis, Minn., wheat-flour manufacture; Walter Baker & Company, Dorchester, Mass., chocolate products; The American Silver Company, Silversmith Building, Chicago, Ill., "The Evolution of a Teaspoon" (50 cents postage); Washburn Crosby Company, Minneapolis, Minn., flour exhibit; The Walter M. Lowney Company, Boston, Mass., chocolate; Wilson & Company, Chicago, Ill., meat charts, and recipes for cooking meat.

In addition to the reference-books that should be found in the school library there are bulletins which are very valuable as reference material. Write to the following addresses and ask that publications be sent to you and your name put on their permanent

mailing list: Division of Home Economics, Bureau of Education, Washington, D. C.; Children's Bureau, Department of Labor, Washington, D. C.; Department of Agriculture, Washington, D. C.; United States Public Health Service, Treasury Department, Washington, D. C.; Federal Board for Vocational Education, Washington, D. C.; all State universities and agricultural colleges; American Home Economics Association, 1211 Cathedral Street, Baltimore, Md., "The Journal of Home Economics" ($2 per year). In writing to the Department of Agriculture ask also for a list of Farmers' Bulletins and for publications issued by the Office of Home Economics.

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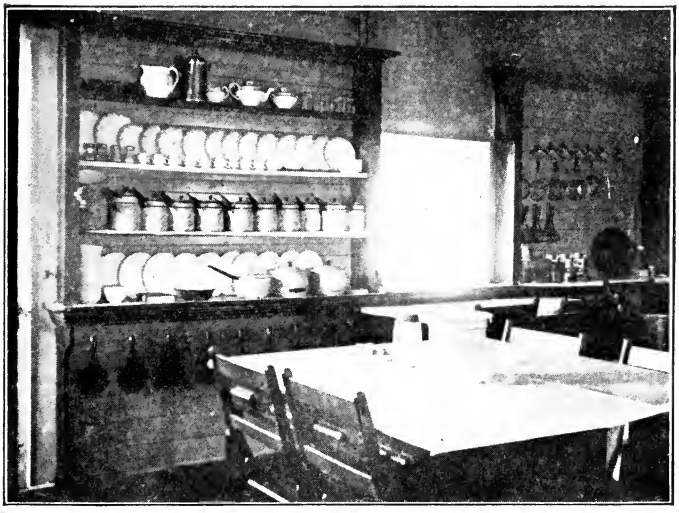
PROCESSES USED IN COOKING

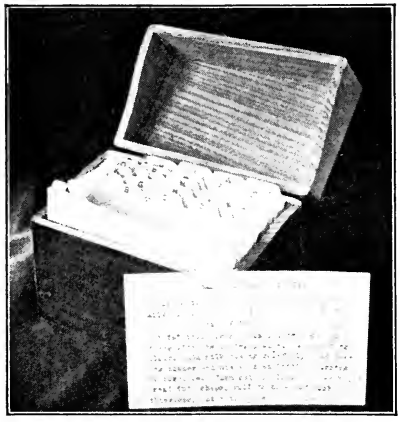
Food is cooked: (1) to improve its appearance, (2) to improve its flavor, (3) to make some foodstuffs more digestible, and (4) to kill micro-organisms.



A Cooking Laboratory in a Rural School

The *first cooking* that was done by primitive man was the roasting of game by the open fire and the parching of corn on hot stones, both processes

requiring no cooking equipment. Before water could be used as a cooking medium, primitive woman had to begin pottery-making and basket-weaving; she had to have utensils which would hold the water. Food was first cooked in water by placing hot stones in the water with the food, not by placing the utensil containing the water over the fire. Some processes used in camp cookery are modified forms of primitive cooking.



CARD-FILE COOK BOOK

One card is to be used for each recipe. Card may be hung up in a convenient place while in use.

Cooking processes at our command to-day are:

I. Direct application of heat.

1. Broiling: cooking over a hot fire, exposing the surfaces of food to the direct heat, with short cooking of the interior of the food; example, broiled beefsteak.
2. Roasting: cooking by an open fire, exposing the surface to the direct heat, but allowing a long period of cooking for the interior of the food; example, a roast cooked under the direct gas flame in an oven.

Strictly speaking, the popular use of the word "roasting", as applied to meat

cooked in an oven, is incorrect. "Roast chicken" and "roast beef" are really baked meats.

II. Application by means of heated air.
Baking: cooking in a heated oven; example, baked bread.

III. Application by means of heated water.
1. Boiling: cooking in boiling water; example, boiled potatoes.
2. Stewing or simmering: cooking in water below the boiling-point; example, beef stew.

IV. Application by means of steam.
Steaming: (*a*) cooking in a utensil into which steam passes; example, steamed pudding; (*b*) cooking in a closed utensil surrounded by steam; example, milk heated in double-boiler.

V. Application by means of heated fat.
1. Sautéing: cooking in a small quantity of fat; example, browned potatoes.
2. Frying: cooking in hot fat deep enough to cover the food; example, croquettes.

VI. Application by means of heated metal.
1. Pan-broiling: cooking in a frying-pan or on a griddle without the addition of fat; example, broiled bacon.

VII. Combination processes.
1. Braising: a combination of stewing and baking; example, casserole of beef.
2. Fricasseeing: a combination of sautéing and stewing; example, fricasseed chicken.

In all cooking great care must be taken to *follow directions* carefully. When tested recipes fail, it

is usually the fault of the cook and not the fault of the recipe. Cooking becomes much more interesting when one understands why certain processes are followed, and in the laboratory work in a school course this is one of the important things to learn.

One Type of Cooking-apron — Kimono Style

Every girl should learn to work accurately yet quickly, making only what motions are necessary, thereby saving time and energy. Sometimes there is only one "best" way to do a thing; in other cases there may be several equally good, and it is always wise to use methods that are considered the best by experts.

LABORATORY EXERCISES

DIRECTIONS FOR WORK IN LABORATORY

Personal appearance:

1. A wash dress is always to be preferred in the school laboratory or home kitchen.

2. White aprons should be worn in the cooking laboratory. There are several types that may be used.

3. Holders for lifting hot dishes, and individual hand towels, should always be used by every student.

4. The hair should be brushed back and fastened so that it does not fall in the face. If white caps are worn they should be pulled down to cover the front of the hair.

5. The hands should be thoroughly washed and the nails scrubbed with a brush and cleaned thoroughly before you begin any cooking. When cooking, wash your hands whenever they become sticky or soiled.

6. Do not wear rings, bracelets, or other jewelry in the kitchen.

Directions for work should include:

Assignment to desks.

Checking equipment.

Discussion of rules regarding care of towels, desks, implements, etc.

Explanation of the kind of notebooks, reference books, or textbooks required.

SOME POINTS ABOUT FOOD

When people or animals go without food too long, they lose flesh and become very weak; finally all motion of the body ceases. The eating of proper food is very important if the body is to be kept well and strong.

Food makes muscle, fat, bone, blood, hair and teeth; it produces the energy which is needed for all movements of the body, and it also supplies the warmth required. Only a part of the food is used by the body for the purposes named, and such parts are called *foodstuffs* or the food principles.

There are five main classes of foodstuffs. In some foods only one class of foodstuffs is found, while in other foods several or all of the foodstuffs may be present.

The five groups of *foodstuffs* are:

1. *Protein*, used in the body for body-building, and to produce energy and warmth. It is present in such foods as meat, milk, cheese, cereals and legumes.
2. *Carbohydrates*, used in the body to produce energy and warmth. They are found in such foods as potatoes, rice, fruits, cereals and legumes.
3. *Fat*, used in the body to produce energy and warmth. It is found in large amounts in such foods as butter, cream, olive oil and fat meat.
4. *Minerals*, used in the body for body-building, and found in most foods.
5. *Water*, used in the body to help in digesting the food and in carrying away waste material from the organs of the body, thus keeping the body in a healthy condition. Water is found in practically all foods in either large or small amounts.

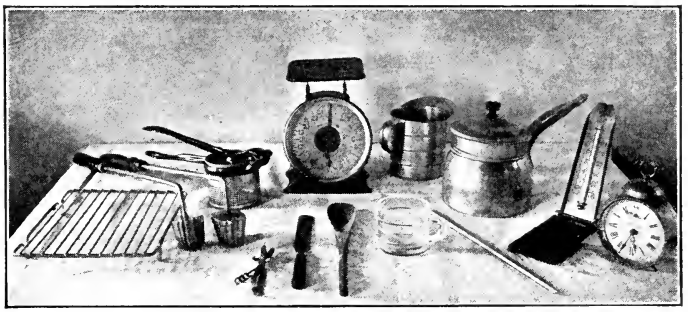
Besides these five foodstuffs there is found in some foods a very important class of substances called *vitamines*. Little is known about the vitamines except that there are probably two kinds, and that they are necessary for the *body growth* and also to *keep the body in health*. One kind is found in butter, egg-yolk and such vegetables as lettuce, spinach and dandelions. The other kind is present in vegetables, fruits and whole cereals. Milk contains both kinds.

When the meals for the day are planned, foods must be selected that will furnish some of each of the foodstuffs and vitamines, so that the body shall not lack material for growth, warmth and energy.

LABORATORY EXERCISES

MEASUREMENTS

Careful measuring or weighing of the ingredients used in a recipe is very necessary if the results are to be of the best. The utensils commonly used for measuring foods are: scales, measuring-cup, measuring-spoons, tablespoons and teaspoons. In measuring dry materials, fill



KITCHEN EQUIPMENT

Double-boiler, vegetable-press, scales, oven and chemical thermometers, measuring-cups, spatula, wooden spoon and bread-rack.

the measure and level off the top with a knife. When one half teaspoon is desired, divide the material lengthwise of the spoon and scrape out one half. For one fourth teaspoon divide crosswise the remaining half.

Experiment:

Use water for the following:

1. To find the number of teaspoons in one tablespoon.
2. To find the number of tablespoons in one cup.
3. To find the number of cups in one pint.

Use sugar for the following:

1. To find the number of tablespoons in one cup.
2. To find the number of cups in one pound.

Use flour for the following:

1. Fill the cup by dipping it into the flour; weigh.
2. Fill the cup by using a spoon; weigh.
3. Sift the flour, fill the cup by using a spoon; weigh.

Use salt for the following:

1. Measure one half, one fourth, and one eighth teaspoon.

BAKED STUFFED PEPPERS

Cut a thick slice from the stem-end of each pepper, remove all the seeds, wash thoroughly and let drain. Use enough stale bread crumbs to fill the peppers; add salt to taste, as much butter as desired and enough water to slightly moisten the crumbs. Heat this mixture until the butter is melted. Fill the peppers. Place them in a baking-dish in an upright position, and on top of each place a small square of bacon. Put water in baking-dish one half inch in depth. Bake slowly for forty-five minutes or until tender.

Have you ever seen green peppers used in any other way? Perhaps some one can bring to school a good recipe that may be copied in the class notebook and tried at home by other members of the class.

REVIEW QUESTIONS

1. For what purpose is food used in the body?
2. Name the five foodstuffs (food principles).
3. Name some foods in which each is found.
4. Do foods ever contain more than one foodstuff?
5. Name one food in which vitamines are found.

THE KITCHEN

The kitchen is *a workshop* where food is cared for, prepared, cooked and served.

The most *convenient kitchen* has windows or doors on two sides of the room, so that when these are

open, a cross draft of air clears the room of smoke and odors.

The kitchen should be the *cleanest room* in the house. The most sanitary kitchen has *walls* finished in material that can be washed, such as oil paint or tile. Walls and woodwork should be light in color, because this makes the room seem more cheerful and

A Convenient Kitchen

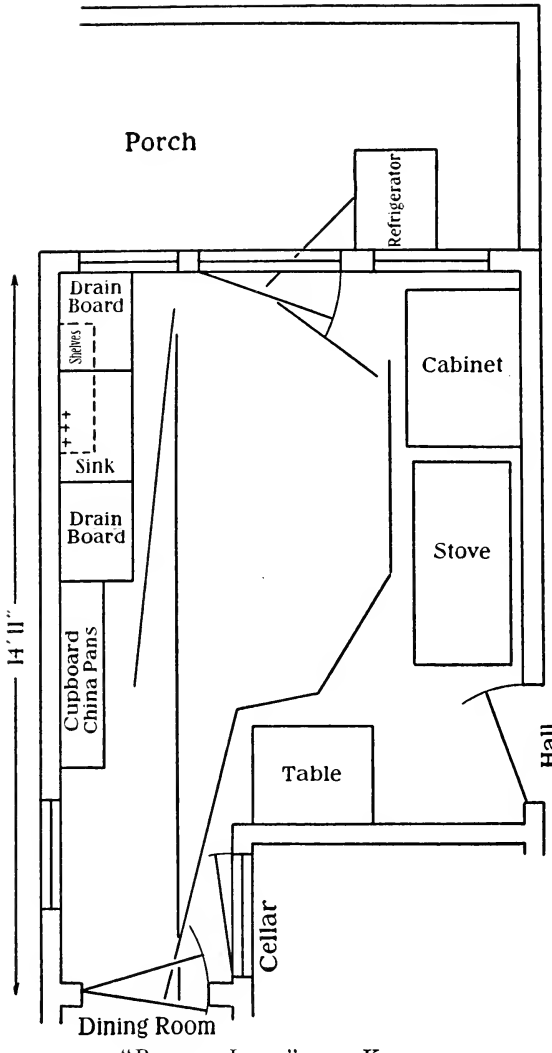
With built-in ironing-board, ice-box and work-table.

also makes it easy to "see the dirt", which then may be removed.

Hard-wood floors may be oiled or waxed and used without covering. *Soft-wood floors* may be covered with linoleum or cork carpet, or they may be painted.

The kitchen should have *built-in cupboards* with plenty of space for utensils.

The sink, with a drain board at each end, should be set where there is plenty of light, and it should



"Routing Lines" in a Kitchen

A wheel-tray would be a convenience in removing dishes from the dining room. The refrigerator would be more convenient if built into the wall.

be open underneath to avoid the dampness often found in sink cupboards.

The kitchen may have a *built-in ice-box* arranged to be iced from the outside of the house. Some kitchens have a dumb waiter to the basement.

If an *ironing-board* is used in the kitchen, it may be built into a space in the wall, being let down when needed and folded back when not in use.

Other devices sometimes found in the kitchen are: a closet for cleaning implements, such as broom, bucket and brushes; a cupboard for the leaves of the dining-table, and a built-in kitchen cabinet. There may also be a pantry.

Each housekeeper decides for herself how to make the kitchen a well arranged and equipped workshop. In a well arranged kitchen the equipment is so placed that the housekeeper can use it without losing time or wasting strength in walking.

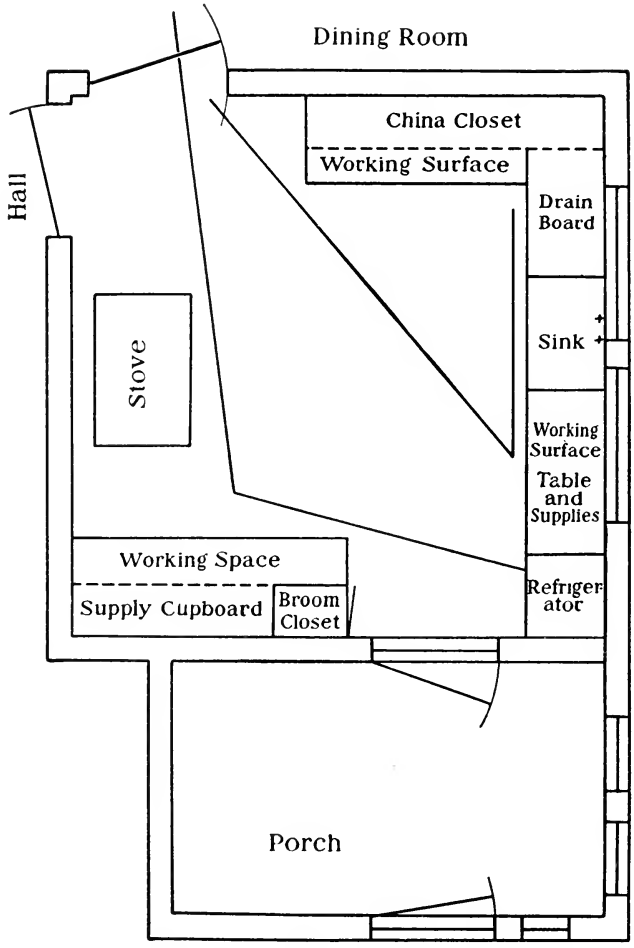
HOME PROBLEMS AND QUESTIONS

Make a drawing of your home kitchen, showing where the sink, the cupboards, the table, the stove and other equipment are placed.

Notice with care the steps taken by a person preparing breakfast, and then make dotted lines on your drawing to show where she has walked. Such a line is called a "routing line."

Do you think any of the equipment could be changed to make the kitchen more convenient?

Bring your drawing to school for discussion.



"Routing Lines" in a Well Arranged Kitchen

If the refrigerator were built into the wall it could be filled from the porch outside.

LABORATORY EXERCISES

STUDY OF STOVES

Experiment:

Examine the stoves to be used in the laboratory.

If a gas range:

1. What kinds of ovens are there?
2. Is there a pilot to use when lighting the ovens?
3. Do the oven doors fasten tightly?
4. Does the top burner have a stationary or movable mixer?
5. If there is a movable mixer, light the gas burner and observe the color of the flame; turn the mixer and observe the flame.
6. What color should the flame be to give the most heat?
7. Place a bright clean kettle, containing a small amount of water, over the yellow flame. What happens to the outside of the kettle?
8. What is the use of the mixer?
9. How is the top burner removed for cleaning?
10. Can other parts be removed for cleaning?

If a coal or wood range:

1. Examine the firebox to see how it is constructed.
2. Where is the ash-pan? How are the ashes removed?
3. Find the dampers on the stove, and determine the use of each.
4. For what is the stovepipe used?
5. How does the heat warm the oven?
6. Lay the fire in the following manner. Clean the firebox and ash-pan, crumple paper and put a generous layer over the bottom of the firebox; place kindling on top of the paper in such a way that the air passes between the pieces; place one large or two small shovelfuls of coal or sticks of stove wood on top of the

kindling. How shall the drafts be arranged before the fire is lighted? Clean the top of the stove before lighting the fire.

ORANGEADE

Juice of one orange	$1\frac{1}{4}$ tbsp. sugar
$\frac{1}{2}$ tsp. lemon juice	$\frac{2}{3}$ c. water

Mix ingredients thoroughly. Perhaps the mixture may need straining. Chill before serving.

Fruitade or lemonade may be made also.

APPARATUS FOR THE KITCHEN

Stoves are of various types and must be selected to suit the kind of fuel to be used and the size of the kitchen in which they are to be placed.

A *fuel* is a substance which when burned produces heat, and it is this heat that cooks food when applied to it.

Wood, coal, gasoline, kerosene, manufactured and natural gas, are the fuels commonly used. Electricity is also used for cooking, but is not a fuel. The stove is the apparatus in which the fuel is burned and through which the heat is given off.

In *selecting a stove* or range, choose one that is plain in design and has little nickel finish. A stove covered with decorations is hard to keep clean. Many gas and electric ranges have the oven built on a level with the top of the stove. The oven is easier to use in this position than when underneath the burners.

Gas and *electric stoves* are now made with fireless cooking attachments for both boiling and baking.

While these are more expensive in price than other types, they are great savers of fuel when properly used.

A stove must be in good condition if it is to do good cooking. A coal or wood range must have

Circulation of Air around Oven

soot and ashes removed regularly from the inside of pipes, firebox and ash-pit. Whenever gas burners cannot be regulated to burn without a yellow flame, they must be taken apart and cleaned by boiling in a weak solution of soda.

There should be in the kitchen a supply of cooking

utensils of the right kind to meet any need. Good utensils to use for boiling, stewing and steaming are made of aluminum or enamel ware of good grade; for baking, earthenware, glass, sheet iron and tin are used; iron is used for sautéing and frying.

Aluminum, wooden, or heavily plated tin *spoons* are needed in the kitchen. These are better than enameled spoons because enamel is apt to chip off when the spoon strikes hard surfaces. Steel *knives* are best with the steel blade running through and riveted into the wooden handle. One or more spatulas should be a part of the equipment.

FIRELESS GAS RANGE

Observe "hood" under which fireless cooking may be done. The oven may also be made "fireless."

Any device that aids in doing work as well, but more quickly and easily than it has been done before, is a *labor-saving device*.

Fireless cookers, pressure and steam cookers, cake and bread-mixers, food-grinders and double-boilers are examples of labor-saving devices that are useful in the kitchen. Every housekeeper should have as many labor-saving devices as possible.

HOME PROBLEMS AND QUESTIONS

Find the price of the following: a gas range, a coal or wood range, a two-compartment fireless

cooker, food-grinders, double-boilers, spatulas, refrigerators, garbage-cans.

Look through the advertisements in the magazines and papers, at home or in the public library, and make a list of other labor-saving devices and cooking utensils not named in the lesson. How many of these have you seen used?

Bring the lists to school for discussion.

LABORATORY EXERCISES

TEMPERATURES

Experiment:

Examine the thermometer to be used in taking temperatures.

1. Is it a centigrade or Fahrenheit thermometer?
2. What is "boiling-point" on each? freezing-point?
3. (*a*) What is the temperature of one cup of water in the top part of a double-boiler after the water in the lower part has been boiling twenty minutes? Continue boiling. Does the water in the top part of the double-boiler ever reach boiling-point? (*b*) What is the temperature of one cup of water in a small saucepan over direct heat when the first small bubbles appear on the surface? when the large bubbles come to the surface and break? when the fire is turned higher and the bubbles form and break more quickly? The vapor which comes off the surface of the water is called steam. Continue boiling the water for a few minutes; remove from the fire and measure the water. What has happened?

Examine the fireless cooker, if there is one in the laboratory; if not, the class may make one, following

THE FIRELESS COOKER

Placing the heated stone in the cooker.

the directions given in Farmers' Bulletin No. 771, "Home-made Fireless Cookers and their Use", obtained by writing to the U. S. Department of Agriculture, Washington, D. C.

ROLLED OATS

3 c. boiling water 1 c. rolled oats 1 tsp. salt

Heat water to boiling point by placing the top part of the double-boiler over direct heat; add salt; stir in the rolled oats. Cook ten minutes. Place over water in the double-boiler; cook one hour.

This may be cooked in the fireless cooker.

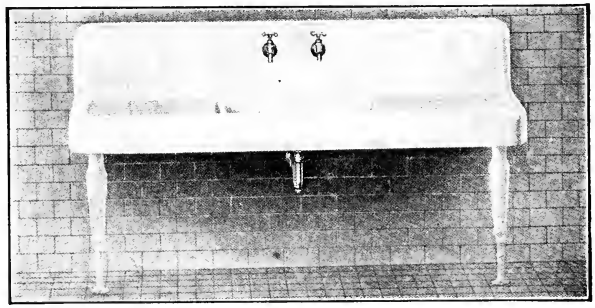
If the fireless cooker has a large compartment, fill the large kettle half full of boiling water, place the prepared oatmeal in a small tightly covered kettle, and set on the wire rack placed inside the large kettle, so that the hot water is below the top of the small kettle. Close the cooker and do not open until the food is needed for the meal. Cereals may be put in the fireless cooker at night and will then be ready for breakfast in the morning.

DISHWASHING

The housekeeper sometimes considers dishwashing "drudgery", and it may be so when poor equipment is used for the task, or when she does not know how to do the work correctly. The best type of housekeeper feels that every part of her work is worth doing well, and whenever she thinks about why she is doing the task, it ceases to be drudgery. To know the *reason for washing dishes* helps to make the work more interesting. Dishes are washed to make them more sanitary and more pleasing to use. It is not safe nor pleasant to eat from dirty or sticky dishes.

The *equipment* needed for washing dishes consists of plenty of clean hot water, good soap, or soap powder, scouring-powder, dishpans, dish-drainer, dishcloth and mops, dish-towels, bottle and sink brushes; and there may be added a plate-scraper, a metal dishcloth and soap-shaker.

There are *two kinds of water*, hard and soft. When soap will not make good suds in the water, it is because the water is "hard." Hard water is water that has taken up lime or iron from the soil, and is



One-piece Kitchen Sink; an excellent type

the kind that usually comes from wells. Rain water is soft water, and is better for washing dishes because soap makes a good suds in it. If hard water must be used, borax, ammonia, or a strong soap powder or soap must be added.

Soap is best for use when it is very dry. It may be purchased by the dozen cakes or bars, or by the box. Some persons make "soft" soap at home by boiling scraps of fat with lye made from wood ashes.

The steps in washing dishes correctly are:

1. Remove the dishes from the table. Remove the bits of food from the plates with the rubber

plate-scraper or a piece of paper. Rinse off very dirty dishes. Pile together dishes that are alike.

2. Put to soak all cooking utensils. Hot water should be put in those which have contained sugar or syrup, and cold water in those which have been used with milk, eggs, cereal, starch or flour.

3. Pour hot water in the dishpan, make a good suds with the soap, use a clean dishcloth (not a "rag") or mop, and wash every dish carefully. Do not have the dishpan full of dirty dishes while washing. Always wash the cleanest dishes first.

4. Place the washed dishes in a drain-pan or dish-drier, being careful not to crowd them. Crowding dishes in a pan is apt to chip them and makes it hard to scald them thoroughly. This pan or drier should be placed at the left of the pan in which the dishes are washed because this will save unnecessary motions in putting the dishes from one into the other.

5. Rinse the dishes thoroughly with boiling water, being sure that each dish has been rinsed inside and out. If the dishes have been scalded in a dish-drier, it may be set on the drain-board and the dishes allowed to dry without wiping. The silver and glass should be washed first. They will look best when wiped and polished dry with a towel. Some persons like to dry all the dishes with a towel. This is a good method, but it takes more time than drying them in a rack or drier.

6. Scrape out and rinse off the cooking utensils. Use plenty of hot soapy water for washing them; wash thoroughly, both inside and out, scouring if necessary. Rinse with boiling water and wipe dry. Steel knives may be scoured with scouring-powder applied with a cork.

7. Wash off the drain-boards and tables, and scour them with the powder and a brush if necessary. Use clean water for this. Wash out the sink and scour it with a brush and scouring-powder when the soapy water will not remove the stains.

8. Wash the dish-towels in clean soapy water, removing all spots. Rinse in clean water, shake out and pull into shape. Hang to dry on a rack for this purpose in the kitchen, or better still, hang outdoors in the sun. Wash and rinse the dishcloth or dish-mop.

9. Clean out the dishpan thoroughly, wipe it dry and put it away.

LABORATORY EXERCISES

CARE OF EQUIPMENT

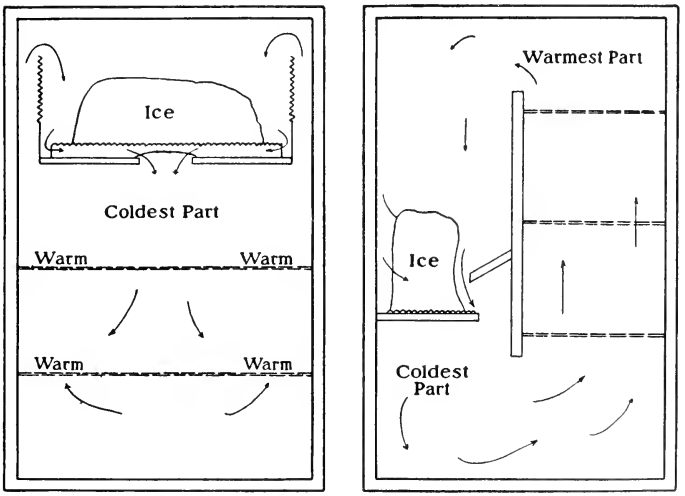
The Sink

1. Find the waste-pipe; the trap. Of what value is the trap?
2. Of what material is the sink made?
3. Of what material are the drain-boards made?
4. Of what material are the faucets made?
5. To clean the sink:
   (*a*) Faucets — brass may be cleaned with scouring-powder. If stained, use vinegar or lemon juice before scouring; nickel needs only washing with soap and water.
   (*b*) Wash drain-boards and sink; see lesson above (Section 7).

Every sink needs a sink-strainer through which dish-water or other liquids may be poured, thereby catching all refuse. Clean boiling water should be poured down the waste-pipe after very greasy water.

The Refrigerator

1. Find the waste-pipe. Into what does it drain? Can it be removed for cleaning?
2. Of what material is the lining of the refrigerator?
3. What other parts of the refrigerator may be removed when cleaning?
4. To clean the refrigerator:
   (*a*) Remove immediately any food that has been spilled.
   (*b*) Once a week remove all food and ice; take out the shelves and other parts; wash these and the inside of the ice-box with clean,



Circulation of Air in Two Common Types of Refrigerator

warm, soapy water and rinse with clean cold water; a solution of washing soda may be poured down the drain-pipe. Do the work as quickly as possible.

The Garbage-Can

If no liquid material is placed in the garbage-can, the garbage may be wrapped in newspaper before placing in the can. This keeps the can in excellent condition.

1. To clean, when garbage is wrapped, wash out with clean, hot, soapy water once a week.

2. To clean, when garbage is not wrapped, scrub with a brush, using a strong washing-soda solution; rinse with boiling water; dry in the sun. A dirty garbage-can has a bad smell and attracts flies. A garbage-can must always be kept tightly covered.

RICED POTATOES

Wash and peel a potato. Cook in boiling salted water, allowing $\frac{1}{2}$ tsp. of salt to one pint of water. Boil gently. When the potato can be pierced to the center easily with a fork, remove from the water. Press through the vegetable press or ricer into a hot dish. Serve.

MASHED POTATOES

To the riced potato add two teaspoons of hot milk; one half teaspoon of butter; salt to taste. Beat with a fork until the mixture is light and fluffy. Place in a hot dish and serve.

REVIEW QUESTIONS

1. What equipment is needed for washing dishes well?
2. What are the two kinds of water used?
3. Which is the best kind to use for dishwashing? Why?
4. How should the dishes be prepared for washing? the cooking utensils?
5. State the steps in washing and drying dishes.
6. How should the dish-towels and dishcloth be cared for after dishwashing?
7. Have you ever washed dishes by this method?
8. Have you ever seen a dishwasher used?

THE BREAKFAST PLAN

There are many *types of breakfast* that may be served, and every family will have its own particular plan for this meal.

The foods generally used for breakfast are fruit, cereals, bread and beverages, with sometimes egg, meat or vegetable dishes.

The *menu* should vary with (1) the time of year, (2) the type of work which the members of the family are doing, (3) the kind of meal eaten the night before, and (4) the size, weight and age of the members of the family.

In the summer it is well to avoid eating much meat, and meat can easily be omitted from breakfast.

It is well, also, to eat less heat-producing food in summer than in winter, because then the body does not need so much heat to keep it warm.

When *too much food* is eaten, a good deal is lost because some foodstuffs cannot be stored in the body and must, therefore, be carried off from the body in the form of waste material.

If a man is doing hard work out of doors he needs more food than does the man who sits all day at his desk in an office, because the man in the office does not use so much muscular energy in doing his work as does the man who works with his muscles.

If dinner is the meal served in the evening, the family does not wish nor need much for breakfast the following morning. If a light supper is the last meal of the day, then more food should be served for breakfast.

The members of the family differ in size, weight and age, and the food eaten should vary in amount and kind. The baby and small child should not

eat the same food, nor so much, as the man in the family. How then shall the meal be planned to suit each member of the family? It is a good plan to make a menu that contains enough food of the right kind for the man, and to have in that menu some food that will suit the small child.

The following are some *general suggestions* for planning the breakfast:

1. Breakfast consisting of fruit, bread and beverage; suitable for the man who works in an office and the woman who does light work. For the small child, cereal and milk would have to be added and tea or coffee omitted.

2. Breakfast consisting of fruit, cereal, bread and beverage; suitable for the man who does a good deal of walking but works indoors, and for the woman who does ordinary housework, office work, or teaching. With cocoa or milk as the beverage, this would be good for the small child, the schoolgirl or boy, and the college student.

3. Breakfast consisting of fruit, eggs, bread and a beverage, instead of No. 2. Milk and cereal, however, should be added for the child.

4. Breakfast of fruit, cereal, a meat or egg dish, bread and a beverage; suitable for the man doing hard manual work out of doors, or for women doing hard manual work. The meat should be omitted in the child's diet, and milk or cocoa used as the beverage.

5. Breakfast consisting of fruit, cereal, meat or egg dish, a vegetable, bread and a beverage. This breakfast is a very heavy meal and should be eaten only by a man doing hard manual labor out of doors in cold weather. Many families eating this type

of breakfast do so because they like it and not because they need the food in the daily diet. In many cases they would be in better health if less food were eaten.

HOME PROBLEMS AND QUESTIONS

Are these good breakfast plans? Why?

1. For a hot summer morning: stewed fruit, sausage, buckwheat cakes, coffee.

2. For a small child: coffee, cereal, meat dish and hot biscuit.

3. For a man doing hard manual labor out of doors: fruit, coffee, toast.

4. For the schoolgirl: fruit, cereal, cocoa and toast.

Make two good plans for your breakfast at this season of the year.

Make two good plans for the breakfast of a small child at this season of the year.

Bring these plans to class for discussion.

LABORATORY EXERCISES

FRUIT FOR BREAKFAST

ORANGES

1. Wash the orange, cut through crosswise, serve on plate.

2. Wash the orange, remove the skin and as much of the white portion as possible, divide in sections, arrange attractively on plate, serve.

3. Wash the orange, cut in halves, squeeze out the juice, using the lemon-squeezer; put juice in glass, cool, set on fruit-plate, serve.

BAKED APPLE

Wash the apple, remove the core, leaving the apple whole, and fill the cavity with sugar. Raisins or nutmeg may be used also. Put a little water in the pan to prevent burning. Bake slowly until the apple is tender when pierced with a fork.

BEVERAGES

Beverages are made by combining liquids and flavoring materials.

There are many kinds of beverages, examples of which are coffee, tea, cocoa, lemonade and grape juice.

Water is the liquid used in making most beverages. In addition to the water taken in beverages one should drink a great deal of pure water, because the composition of the body is two thirds water. One may go without food for weeks, but it is not possible to live very long without water. Most persons, because of the taste, like to drink hard water in preference to soft water. Hard water comes from wells and deep springs, and has collected certain mineral substances from the soil over or through which it has come.

When *the soil* is full of filth, the water flowing through it will be impure and may be the cause of typhoid fever, malaria, or other diseases. Impure water may be clear and sparkling in appearance, and the only way to be certain of its purity is to know about the source from which it comes. In the city, the water supply is so carefully watched that the water coming into the house is usually pure. If a well is so situated that the water coming into it

passes through soil into which a barnyard or an outside toilet or a pig-pen is drained, it is likely to be dangerous to health.

When there is the slightest doubt about the purity of water, it should be boiled before drinking.

Boiled water has a flat taste because some of the air in it has been driven off by boiling. The taste may be improved by pouring the water back and forth between two pitchers, thus forcing air into it again.

Ice is frozen water, and is just as pure as the water from which it was made. Ice from a pond should never be dissolved in drinking-water or other beverages. *Artificial ice* is made by freezing water in tanks, the freezing temperature being secured by the evaporation of ammonia. This ice should be much purer than ice from ponds, lakes and rivers.

At school every student should use his or her own drinking-cup unless there is a bubbling fountain. It is dangerous to drink out of a cup that has been used by other persons, because if any one has a disease, such as diphtheria, sore throat or tuberculosis, it may be given to others who use the same cup.

LABORATORY EXERCISES

BEVERAGES

Experiment:

1. Examine coffee beans, finely ground, and pulverized coffee. What is the price of each?
2. Examine samples of tea, both green and black; compare the color and shape of the leaves. Are there bits of stem or other refuse present? Compare prices.
3. Examine cocoa nibs, pulverized cocoa.
4. Pour one half cup of boiling water over two teaspoons of cocoa. Observe the liquid.

5. Mix together one half cup of cold water and two teaspoons of cocoa; boil five minutes. Compare this with No. 4. What has happened?

COCOA

¼ c. cocoa	1 c. water
¼ c. sugar	3 c. milk
⅛ tsp. salt	Vanilla

Mix cocoa, sugar, salt and water. Boil ten minutes. Heat milk in double-boiler, add to this the cocoa paste. Cook twenty minutes. Add vanilla.

An attractive way to serve cocoa is to place a spoonful of whipped cream on top of each cup.

COFFEE

Coffee may be made in several ways.

1. Boiled coffee, made with egg.

1 heaping tbsp. of ground coffee
1 c. water
½ egg-shell or ¼ of an egg-white

THREE TYPES OF COFFEE-POTS

From left to right: drip coffee-pot, coffee percolator and pot for boiled coffee.

Mix together coffee and egg, using a little of the water; add the rest of the water. Boil gently for three to five

minutes. Let stand in warm place for five minutes. Serve. The egg is used to settle the grounds.

2. Boiled coffee without egg.

Use the same proportions as in No. 1. Place the ground coffee in a cheesecloth bag, being careful to pack it very loosely; tie securely.

3. Percolated coffee.

Made in a percolator pot, constructed so that the ground coffee is placed in a container at the top. The water boils up through a tube to the ground coffee, and then drips back into the bottom of the pot.

There are many kinds of percolators sold.

4. Drip coffee.

Like coffee made in percolator, except that the coffee-pot is arranged so that water must drip through the ground coffee from the top.

TEA

1 tsp. tea	1 c. water

Heat fresh water to boiling-point. Pour it over the tea, let stand in a warm place three minutes. Pour off tea into hot teapot or cups. Serve at once.

Tea should never be boiled, nor the water allowed to stand on the tea leaves longer than three minutes, because the longer it stands the more tannic acid is present.

REVIEW QUESTIONS

1. What is a beverage?
2. Name some commonly used beverages.
3. Why is it important to drink pure water?
4. How should impure water be treated when it must be used for drinking?
5. From what source does the water supply come that is used in your school?
6. What is ice?
7. When may ice be put into beverages?
8. Where does the ice come from that is used in your neighborhood? What is the price of one hundred pounds?

BEVERAGES (*Continued*)

Coffee, tea, cocoa and chocolate are the beverages generally used for breakfast. *Coffee* and *tea* should be used only by grown persons; children may take cocoa.

The *coffee-bean* or berry is the seed of a fruit resembling a cherry, and is produced on an evergreen tree that grows in nearly all tropical countries. Most of our coffee comes from South America, mainly from Brazil. In preparing coffee for market the cherry-like fruit is allowed to ferment so that the pulp surrounding the seeds may become soft and can be removed. These seeds contain two "beans" which grow with their flat sides together and are inclosed in a husk. This husk has to be dried and then removed, when the beans fall apart. The coffee-beans are then shipped to the country where they are to be sold. The beans are roasted to make them brittle and to develop flavor, and are sold to the housekeeper in this form, or as "*ground coffee.*"

Coffee loses its flavor and *aroma* very quickly after being ground if it is left in an open container, and for this reason some prefer to buy the roasted coffee-beans and grind them only as needed. Ground coffee should be sold in air-tight cans, but if sent from the store in paper sacks should be emptied into air-tight cans at once.

Coffee contains substances that are often harmful for grown persons and are never good for children; one is caffeine, a substance that stimulates the nerves; another is tannic acid, which may disturb digestion.

Most of the *tea* we use comes from China, Japan,

Ceylon and India. Tea is made from the leaves of a plant called Thea. The plant sends out four sets of new shoots a year, and the leaves from these shoots are gathered and cured for tea.

There are *two types of tea*, black and green tea. Green tea is made by drying the tea leaves at a high temperature, which causes them to keep their green color and to curl up. Black tea is made by allowing the leaves to wither and ferment, which causes them to turn dark before being dried. This process gives black tea a flavor different from that of green tea.

Tea contains a substance called "theine" which acts as a stimulant to the nerves. There is also present tannic acid, which is bad for the digestion.

Cocoa is produced from the pod of the cocoa tree which grows in tropical countries. The pod is shaped somewhat like a cucumber, and inside are a large number of seeds surrounded by pulp. The seeds are removed from the pulp and, after being allowed to ferment a few days, are roasted. The husk is then removed and the seed is divided into two parts which are called "*cocoa nibs*."

When cocoa nibs are ground and pressed into a cake, the cake is known as *chocolate*. This chocolate is rather bitter in taste and is used in cookery. When sugar is added to the cake it is called *sweet chocolate*.

Cocoa is made from chocolate by removing a large part of the fat. It is then ground and sold in bulk or in tin containers. The fat that is removed from the chocolate is used for *cocoa butter*. Cocoa has a good deal of food value, and when served as a beverage in which milk is used adds food value to a meal.

LABORATORY EXERCISES

A RECEPTION FOR MOTHERS

Invite the mothers of the girls to the school for the laboratory period. The members of the class should receive and entertain them. Refreshments of tea, coffee or cocoa, sandwiches and marguerites, may be prepared and served by the girls.

MARGUERITES

12 wafers	$\frac{1}{2}$ tsp. salt
1 egg-white	$\frac{1}{4}$ tsp. vanilla
2 tbsp. powdered sugar	$\frac{1}{2}$ c. chopped raisins or nuts, or the two mixed

Beat the egg very stiff. Sugar should be pressed through a wire sieve before using. Add the other ingredients to the sugar and mix carefully with beaten egg-white. Spread on top of the wafers. Brown in a moderate oven.

SANDWICHES

Cut the bread into very thin slices; cream the butter by mashing and beating with a fork. Butter the slices

SANDWICHES MADE IN DIFFERENT SHAPES

of bread, add jelly if desired, lay the slices together evenly. Sandwiches are often cut into fancy shapes, such as round,

triangular, rectangular, or square. The crust may be removed, if desired. The bread scraps may be saved for a bread pudding. Wrap the sandwiches in a dry cloth, then in a slightly damp cloth until ready to serve.

REVIEW QUESTIONS

1. Describe the preparation of coffee for market.
2. How should coffee be cared for after it is purchased?
3. From what countries does most of the tea used in this country come?
4. Describe the preparation of tea for market.
5. Why are tea and coffee harmful to many people?
6. Should children drink tea or coffee?
7. What is cocoa? chocolate? cocoa nibs?

FRUIT

Fruit is very valuable in the diet and, if possible, should be included in the menu every day. *Fresh fruit* can be purchased in the market at all seasons of the year. *Canned* and *dried fruits* can always be substituted when the fresh fruit is too expensive or not available.

Fruits are *composed* largely of water but contain sugar, which is one form of carbohydrate, very small amounts of protein and fat, and mineral matter. Fruit also contains vitamines. The *mineral matter* in fruit, including iron, phosphorus, lime, magnesia and potash, is very valuable to the body.

The botanist says that fruits are the *seed-bearing parts* of the plant, but such foods as *tomatoes* and *cucumbers*, which really are fruits, we class as vegetables.

When fruits are considered as to their food value they are sometimes classified as (1) *flavor fruits*, containing a very large amount of water and very

small amounts of the foodstuffs, and (2) *food fruits*, containing less water and larger amounts of the foodstuffs. Examples of flavor fruits are strawberries and watermelons. Examples of food fruits are bananas, dried figs and dates.

Most persons like fresh fruit, but it does not agree with everyone. Cooked fruit can often be eaten when the raw fruit cannot, because the *cooking* softens the fruit and kills bacteria that may be present. Children should be given cooked fruit in preference to raw fruit. Neither *green fruit* nor *overripe fruit* should be eaten.

Fruits are least expensive when *purchased in season*, that is, when they are being produced on the farms and in the gardens of the community. When fruits have to be shipped long distances they must be sold at higher prices.

Fruit should be cleaned carefully before being used as food. Even when the skin of the fruit is to be removed, it should be washed carefully. One handles both the skin and the fruit at the time of peeling. Berries and similar fruits should be washed thoroughly before being eaten or cooked.

LABORATORY EXERCISES

FRUIT FOR BREAKFAST

GRAPEFRUIT

Wash grapefruit and cut crosswise into halves. Loosen the thick white skin by cutting each section of the fruit from the skin. Use scissors to cut the skin loose from the rind. Cut the core loose from the rind and remove white skin with core. Fill center of grapefruit with powdered sugar if desired. Serve on fruit-plate.

Have you ever eaten grapefruit prepared in any other way?

APPLE SAUCE

1 medium-sized apple
¼ c. water
⅛ tsp. cinnamon or nutmeg (if desired)
½ to 1 tbsp. sugar

Wash and pare the apple. Cut it into quarters and remove the core. Place in saucepan, add the water, cover tightly. Boil gently until apples are tender when pierced with a fork. Add sugar and nutmeg or cinnamon. Cook until sugar is melted.

Other recipes for using apples may be brought from home by members of the class. Are all the recipes good ones to use for breakfast?

REVIEW QUESTIONS

1. Name the fruits that can be used for breakfast.
2. Which of these grow in your locality?
3. What are the foodstuffs found in fruits?
4. What is meant by purchasing "in season"?
5. What fruits are "in season" at the present time?
6. How much are apples per pound? How many pounds are in a peck and in a bushel of apples?
7. How does the price per bushel compare with the price paid when apples are bought by the pound?
8. What is the price of grapefruit? What does one serving cost?

MILK

Milk is one of our most important foods. When we drink milk we should remember that we are taking *a real food* and not merely something to take the place of water. When enough milk is used, some other food can be left out of the diet. Milk is a *perfect food for infants* or young animals and is a *good food for grown persons.*

When the chemist divides milk into its parts he finds the following foodstuffs: protein, carbohydrates, fat, mineral matter and water.

The protein in one glassful of milk is equal to the protein contained in one large egg or in one and one third ounces of beef. Therefore when we use enough milk in a meal we do not need meat. The milk may be used in custards, escalloped and creamed dishes, or it may be used to drink.

When the milk stands, the fat separates and comes to the top. This fat is then called *cream*. The milk remaining when the cream is removed is *skim milk*. The milk without its cream removed is *whole milk*.

The *mineral matter* in milk is very valuable because it is in a good form for the body to use. Milk also contains the *vitamines* which are so important.

Every boy and girl should use a great deal of milk, — some say a pint a day for all children over six years old, and a quart a day for the child under six.

Clean milk is the only safe milk. *Dirty milk* may contain disease germs that cause typhoid fever, tuberculosis, or other diseases. Clean milk comes from clean cows kept in clean barns. The milk must be handled by persons with clean hands and clean clothes, and it must be placed in clean pails, bottles, or pans.

If *milk is purchased* from a store or dairy wagon it should be in bottles, tightly covered. The bottles must be kept in a cool place where there are no flies. If a bottle of milk is put in the refrigerator it must always be tightly covered.

There are several kinds of milk that can be purchased. Milk that is heated to the boiling-point, 212° F., and cooled before it is sold, is called *sterilized milk*. The boiling changes the flavor but kills harmful bacteria that may have been in the milk.

Pasteurized milk is milk which has been heated and kept at a temperature of 140° to 145° F. for twenty to thirty minutes, and then cooled quickly. This process kills bacteria that may cause disease. *Certified milk* is milk that is guaranteed by the producer to be especially clean and pure.

At the grocer's we buy *condensed* or *evaporated milk* in tin cans. This is milk that has had most of the water taken out of it and afterwards has been canned. This is useful to take on camping trips or journeys where fresh milk cannot be obtained. *Powdered milk* may also be found in the stores. This is a dry powder and must have water added before it is used.

Fortunate is the child who lives on a farm and can have all the milk desired. Milk, however, must be regarded as *a very necessary food* and should be used by every family, whether in town or country. It is poor economy to reduce the amount of milk purchased. Some other food could be better spared.

LABORATORY EXERCISES

MILK

WHITE SAUCE

White sauce is made by combining a liquid, a fat and a thickening agent. Cream sauces and gravies are examples of white sauce. White sauce is of different thicknesses, according to its use. The following are the general proportions for white sauce:

No. 1 White Sauce or Thin White Sauce

1 c. liquid 1 tbsp. fat 1 tbsp. flour

Used for cream soups and certain sauces.

No. 2 White Sauce or Medium White Sauce

1 c. liquid 1 tbsp. fat 2 tbsp. flour

Used for vegetables, gravies and sauces.

No. 3 White Sauce or Thick White Sauce

1 c. liquid 2 tbsp. fat 3 tbsp. flour

Used for thick sauces, creamed oysters.

No. 4 White Sauce or Very Thick White Sauce

1 c. liquid 3 tbsp. fat 4 tbsp. flour

Used for croquettes.

There are three ways of combining the ingredients in making white sauces:

Method No. 1. Heat part of the milk in double-boiler; mix the remaining milk with the flour, and add gradually to the heated milk, stirring thoroughly; add the fat just before removing from the fire. Cook twenty to thirty minutes in the double-boiler, stirring occasionally.

Method No. 2. Heat milk in double-boiler; mix into a paste the fat and the flour; add to the heated milk, stirring until no lumps are present; cook twenty to thirty minutes.

Method No. 3. This method is often used in making gravies. Heat the fat slowly; add the flour, and stir until a smooth paste is formed; add the milk, stirring constantly to prevent lumping. Cook six to ten minutes.

CREAM TOAST

1 tbsp. butter 1 c. milk or cream
1 tbsp. flour $\frac{1}{4}$ tsp. salt
4 slices bread

Make white sauce from the first four ingredients. While it is cooking make the toast, being careful not to

burn the bread. Dip each piece in the white sauce, place in a warm dish and pour on the remaining white sauce. Serve in warmed dishes.

FRENCH TOAST

1 c. milk	¼ tsp. salt
1 egg	6 slices stale bread

Beat the egg slightly, add salt and milk, dip each piece of bread in the mixture. In a hot frying-pan place some fat. When it is melted, place the bread in the frying-pan and brown on both sides. Serve with syrup.

CARAMEL SYRUP

Melt one half cup of sugar in a frying-pan and heat until it is a brown syrup; add one half cup of boiling water; boil until the syrup is as thick as desired. Serve with the French toast.

REVIEW QUESTIONS

1. What is clean milk?
2. Why is it necessary to use clean milk?
3. What is Pasteurized milk? sterilized milk?
4. Can either of these be purchased in your neighborhood? Where?
5. What is the price of milk per quart? What is the price of one pint of cream? of one half pint?
6. Can skim milk be purchased from your dairy man? Compare the price of this with the price of whole milk.
7. In what ways may skim milk be used?
8. How should milk be cared for in the home?
9. What is condensed milk?
10. Does your grocer sell condensed milk? What does it cost per can? How much does the can contain?
11. Is milk a valuable food? Why?
12. For what food may milk be substituted?

CEREALS

Cereals are derived from the seeds or grain of certain cultivated grasses. The most commonly used are corn, oats, wheat, barley, rye, buckwheat and rice. From these are made many different kinds of flour, meal and breakfast foods.

Cereals are very *valuable as food* because they contain all the foodstuffs. Carbohydrates are found in the largest amount. Carbohydrates in food are found mainly in three forms: (1) starch, (2) sugar and (3) cellulose. Starch and cellulose are the forms found in cereals.

The grain is made up of cells, the walls of which are of cellulose, and inside is the starch. Cellulose is not easily digested and is of practically no value, but it is useful to the body by furnishing "bulk" which causes the food to pass through the digestive system in a better and easier way.

Cereals contain, also, large amounts of protein and mineral matter; therefore they are useful both for growth and for producing heat and energy.

When the chemist divides a cereal into its parts he finds 65 to 75 per cent of carbohydrates, 10 to 12 per cent of protein, 2 to 8 per cent of fat, about 2 per cent of mineral matter and 10 to 12 per cent of water.

Cereals used for *breakfast foods* may be purchased at the stores in sealed packages, or in bulk by the pound. Those in packages are usually the cleaner but are more expensive.

We can buy *ready prepared breakfast foods*, such as cornflakes, puffed cereals and shredded wheat, or we may purchase the kinds that must be cooked

before serving, such as rolled oats and cream of wheat. The prepared breakfast foods cost more per pound than those which must be cooked.

Cereals do not keep well and it is not wise to buy them in large quantities, even though the price may be lower when bought in that way.

Cereals are cooked for three reasons: (1) to soften the cellulose, (2) to cause the starch grains to swell and burst and (3) to make the taste better. In cooking cereals a fireless cooker may be used.

When cereals are cooked on the stove, always use a double-boiler. This is to prevent burning.

HOME PROBLEMS AND QUESTIONS

Make a list of the cereals grown in this region. Which are the most common?

Make a list of the prepared cereals that can be purchased at the grocery.

Make a list of the cereals to be cooked.

What is the cost of rolled oats by the pound when sold in bulk? What is the cost per box for rolled oats? Read the label on the box to find what amount of oats the box contains. Compare the price of that in the box and that in bulk.

LABORATORY EXERCISES

BREAKFAST CEREALS

CREAM OF WHEAT WITH DATES

2 tbsp. cream of wheat	$\frac{1}{6}$ tsp. salt
$1\frac{1}{4}$ c. water	4 to 6 dates

Heat water to boiling-point, add salt, stir in cream of wheat gradually. Cook about thirty minutes in double-

boiler. When the cooking is about half done, add the dates, which have been cut into fine pieces.

PREPARED CEREALS

Place cereal on pan and heat in oven until crisp. Serve with fruit if desired. Milk or cream may be used with a cereal. Sometimes hot milk is poured over shredded wheat before serving.

TOAST

Cut slices of bread evenly and of even thickness. Toast in oven or on toaster until the slices are of an even brown on both sides, and until the bread is thoroughly dried and crisp. Toast may be served in this form and then it is called "dry toast." Butter may be spread on it and the toast placed in a hot oven until the butter is melted, when it is known as "buttered toast." "Cinnamon toast" is made by spreading toast with butter and sprinkling with sugar and cinnamon, mixed, using three parts of sugar to one of cinnamon. "Dipped toast" is made by quickly dipping toasted bread into hot salted water.

Which kinds would be best to serve for breakfast?

BREAD

In any menu we usually like bread in some form. Bread is another way of serving cereals, because all the flours and meals from which bread is made are prepared from cereals. The cereal used most commonly in making bread is wheat. The product made from wheat and used in bread is called *flour*. There are many different brands of wheat flour and these will make different kinds of bread. The flours are not alike because they are made from different kinds of wheat and by different processes. A great deal of our flour comes from the Northwestern

States and is made from wheat sown in the spring and called *hard-wheat flour*. Wheat grown in the Central States is usually sown in the fall and the flour made from it is called *soft-wheat flour*. Both can be used in bread-making.

Flour that is to be used for bread-making should be creamy in color, rather gritty in feel, and if pressed in the hand should fall apart when released. Flour may be purchased by the barrel, by the sack, or by the pound. It is cheaper when purchased in quantity, if the housekeeper has a suitable place for storing a large amount. Flour must be kept in a clean dry place and in a well covered container.

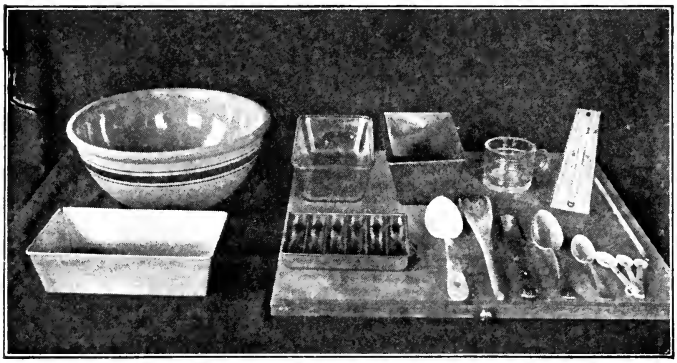
Whole-wheat flour and *Graham flour* are types of wheat flour used for bread-making; these contain bran (the outer covering of the wheat grain) and other parts of the grain not found in white flour. These are valuable in the diet on account of the mineral matter and vitamines they contain.

The material in flour that is important in bread-making is the *gluten*, which is a form of protein that when mixed with water forms an elastic mass. It is the gluten that makes it possible to stretch and pull the dough without its breaking apart.

Yeast is one of the important materials used when *light* bread is made from wheat flour. It is the yeast that makes the dough rise and become light. Yeast, as it is used in bread, is made up of a large number of tiny plants, each too small to be seen by the naked eye. Under a powerful microscope they appear as little cell-like plants. When the plants are put into bread dough they find food material and moisture in the flour and other ingredients, and begin to grow and produce more cells. During this growing pro-

cess a gas is formed which is called carbon dioxide. This gas stretches the gluten in the bread dough and causes the whole mass to *rise*. Alcohol, also, is produced during the growth of the yeast plant, but both the gas and the alcohol pass out of the bread during baking.

The yeast plant, in order to grow properly, must have (1) food and (2) moisture, both found in the dough, and (3) warmth, obtained by keeping the dough in a warm place. The yeast plant is like all



Equipment for Bread-making

other plants in that it will be killed if it gets too hot. A cold temperature does not kill the plants, but they will not grow when cold.

Yeast may be purchased at the store in *dry yeast cakes* or in the form of *compressed yeast*. In the dry yeast the plants are mixed with meal, then dried, and wrapped for sale. The compressed yeast cake contains growing plants with enough food and moisture to permit growth for a few days. It cannot be kept long, however, and usually is purchased fresh for each baking.

Liquid yeast is a third form in which yeast is kept, and is sometimes called "beer yeast" or "starter." It contains the active growing plants and, in a cool place, can be kept for several days.

LABORATORY EXERCISES

YEAST BREAD

Bread is made in two ways: (1) by the "long process", in which a sponge is used and this sponge is allowed to stand, usually overnight, before being made into dough, and (2) by the "short process", in which no sponge is used, but the dough is made at first. The second is the more modern method, and is popular because it requires much less time for making bread than the "long process." "Short-process" bread is most easily made by using compressed yeast.

RECIPE FOR ONE LOAF OF BREAD

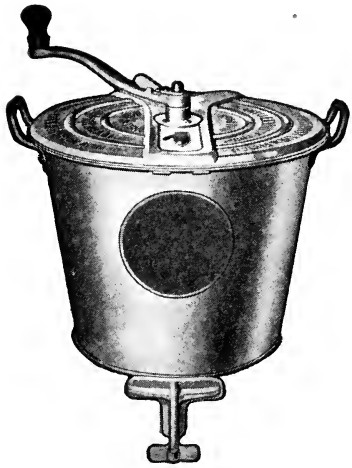
1 c. liquid (milk or water, or the two mixed)
1 tsp. salt — 1 tbsp. fat
1 tbsp. sugar — 3 c. flour (about)
1 compressed yeast cake

The large amount of yeast is used in order that the bread may be made and baked in two or three hours. At home, one cake of yeast would do for three or four loaves of bread.

Place the salt, sugar and fat in a mixing-bowl. Scald the liquid and pour over the ingredients in the mixing-bowl. Let stand until lukewarm. While this is cooling, place the yeast in 2 tbsp. of lukewarm water to soften. Add this to the lukewarm mixture in the bowl. Stir thoroughly. Sift flour into the liquid mixture gradually, stirring thoroughly. As soon as it is possible to knead the dough without having it stick to the fingers, place it on a floured bread-board and knead until it is smooth in appearance and elastic to touch. Clean out the mixing-

bowl, grease, place dough in bowl. Cover with a lid. Set mixing-bowl in a dishpan half full of lukewarm water; put in a warm, but not hot, place. If bread is made in hot weather the mixing-bowl need not be placed in the water. Bread dough kept at 80 to 86° F. rises best. Use a thermometer to test the dough. Experienced bread-makers can tell by the "feel" of the dough whether it is warm enough.

When the dough has doubled in size, knead again, adding no flour except what is needed on the board to keep the dough from sticking. Shape into a loaf and place in a well greased bread-pan. Grease the pan by using a piece of oil paper on which has been placed a little fat, or use a brush made for the purpose. Cover the pan and set where the proper temperature for rising may be maintained. When the loaf is doubled in size, place in an oven heated to 400° to 425° F. Gradually lower the temperature to 380° F. Use an oven thermometer. The loaves should be turned around in the oven once or twice during the first few minutes of baking, so that the shape of the loaf will be good. No brown crust should form on the bread until after the first ten or fifteen minutes. Bake one hour.



Bread-mixer

Remove bread from pan and place it, uncovered, on a bread-rack to cool; or place loaf against pan in such a way that no side touches a flat surface.

OTHER WORK WITH BREAD

While bread is baking, score it, using the score card given in the next section.

A lesson in kneading bread might be given, using one large portion of dough which may be prepared before the class assembles.

If there is a bread-mixer in the equipment, examine it. Perhaps there will be dough set to rise in it before the class begins, so that the kneading may be done by the class.

REVIEW QUESTIONS

1. What kinds of wheat flour are used for bread-making?
2. State the necessary qualities of white flour that is good to use for bread-making.
3. How is bread flour purchased? What is the price of one pound of flour in bulk? of a 25-lb. sack? of a 50-lb. sack?
4. What is gluten? How is it valuable in bread-making?
5. What is yeast?
6. In what forms do we have yeast for bread-making?
7. How does yeast make dough rise?
8. Would yeast grow if placed in water alone? Why?
9. What effect does a hot temperature have on yeast? a cold temperature? When does this have a great deal to do with bread-making?
10. From what section of the country does a great deal of flour come?

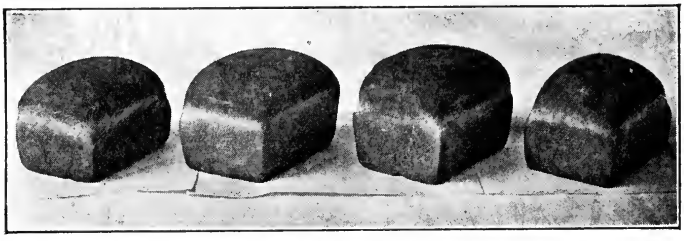
BREAD (*Continued*)

Bread should be *thoroughly baked*, because during the baking process the yeast plant and other bacteria present are killed, and other changes also take place that make the bread more easily digested. It is better to bake one loaf in a pan instead of two or three or four loaves together in a larger pan.

Bread that is *well baked* is an even golden brown all over; and when the bread is twenty-four hours old the crumb from the middle of the loaf will crumble

and not form "dough-balls" when rubbed between the fingers. Bread that has just been baked is hard to digest because it forms a pasty mass in the mouth and is not chewed so thoroughly as it should be. It is better for use after standing twenty-four hours.

Bread *should be kept* in a metal container rather than in a wooden or earthenware jar. The container should be washed and scalded often with boiling water, and may be placed in the sun to dry thoroughly. Scalding water and sunshine will kill any bacteria that may be in the box which would



Good Loaves of Bread

cause the bread to spoil. Bread should not be wrapped in a cloth while warm because this is apt to spoil the flavor.

A great deal of *baker's bread* is now used, and in almost any locality good bread of this kind can be obtained. The large modern bakeries make good clean bread. When we buy bread from the store it is well to know whence it comes and to find out if it has been properly made and cared for. A great deal of bread is wrapped in paper before it leaves the bakery and this is usually the cleanest bread that can be bought, as all dust, flies, dirty hands and dirty clothes have been kept away from it.

A slice of baker's bread usually does not contain so much food value as a slice of home-made bread of the same size, because it does not weigh so much and therefore contains less flour and probably less milk and fat.

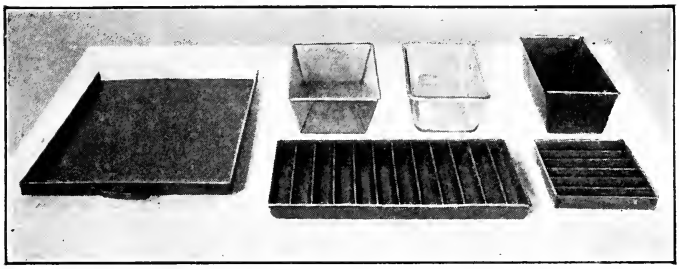
A girl should know how to make good bread, even though the bread used in her home is bought from the baker. The United States government considers bread-making such an important thing for a girl to know that the Department of Agriculture has organized bread clubs in all sections of the country. The girls who belong to these clubs learn to make bread by doing it many times and then entering a loaf to be judged in a contest with other girls. To decide just how well she has learned to do the work, the judge uses the Standard Score Card for Bread that has been adopted by the United States Department of Agriculture.

SCORE CARD [1]

1. General appearance:	
Shape	5
Smoothness of crust	5
Depth and evenness of color	5
2. Lightness	10
3. Crust:	
Thickness	5
Quality (crispness and elasticity)	5
Color	10
4. Crumb:	
Texture (size and uniformity of cells, thickness of cell walls)	15
Elasticity (softness and springiness)	15
5. Flavor (taste and odor)	25
Total	100

[1] From Farmers' Bulletin 807, "Bread and Bread-making in the Home", U. S. Department of Agriculture.

One of the favorite ways of preparing light bread for breakfast is to make it into toast. Toast is easier to digest than white bread, when it is properly made, because there are certain changes that take place in the starch during the toasting. In making dry toast, the slice should be dried out and evenly browned on both sides.



BREAD-PANS, BREAD-STICK PANS AND BAKING-SHEET

All clean scraps of bread and toast should be dried and made into crumbs; these can be used in many ways.

Waffles, batter cakes, muffins, popovers and biscuits may be substituted for yeast bread in the breakfast plan.

In some parts of the United States hot breads are used at every meal, and most of the breads used are quick breads. Quick breads are made to rise in a different way from yeast breads. We will study in another lesson the methods used.

LABORATORY EXERCISES

ROLLS AND BATTER CAKES

Experiment: Mix 1 tbsp. flour, 1 tbsp. sugar, $\frac{3}{4}$ cake compressed yeast, 5 tbsp. cold water to a smooth paste.

Divide into three parts, place each in a tumbler and label 1, 2 and 3.

(*a*) Fill No. 1 with boiling water, place glass in bowl of boiling water, let stand in a hot place fifteen minutes.

(*b*) Half fill No. 2 with lukewarm water, let it stand fifteen minutes in a temperature of 80° to 90° F.

(*c*) Fill No. 3 with cold water, place it in a bowl of cracked ice, or outside the window if the weather is freezing, for fifteen minutes.

Observe the foam on top of each glass — the more foam the more active is the yeast.

Which has produced the most foam? What causes the foam? What does this teach about the temperature for bread-making?

(*d*) Place $\frac{1}{4}$ yeast cake in 2 tbsp. water. Let it stand fifteen minutes. Has any foam come to the top? Why?

(*e*) Let No. 3 stand in a temperature of 80° to 90° F. for one hour. Has any change occurred in contents of glass? Why?

(*f*) Remove No. 1 from bowl of boiling water, let it stand in a lukewarm place for one hour. Has any change occurred in contents of glass? Why?

PARKER HOUSE ROLLS

1 c. scalded milk	$\frac{1}{2}$ tsp. salt
1 tbsp. butter	$\frac{1}{2}$ yeast cake dissolved in $\frac{1}{4}$ c. lukewarm water
1 tbsp. sugar	

3 c. flour (about)

Pour scalded milk over salt, butter and sugar. When mixture is lukewarm, add yeast and one half the flour. Beat until smooth; cover, and let rise. Stir in flour until dough is stiff enough to handle. Knead until smooth and elastic. Let rise again, then turn out on bread-board, roll and pat the mixture until it is one third inch in thickness. Cut with biscuit-cutter. With the handle of a knife which has been dipped in flour, make a crease through the middle of each piece. Brush over each piece with

butter; fold, and press edges together. Place in greased pan, one inch apart, cover and let rise. Bake fifteen to twenty minutes in a hot oven.

The long process for bread-making is used in making these rolls. In what other ways may bread dough be used? Perhaps the class can bring some good recipes from home.

BATTER CAKES

¾ c. milk	¼ tsp. salt
1 egg	2 tsp. baking powder
1 tbsp. melted butter	1 c. flour (about)

Add the well beaten egg to the milk. Mix together the dry ingredients. Sift slowly into egg and milk mixture, beating thoroughly. Drop by spoonfuls on a hot greased griddle. Cook on one side until top is puffed and full of bubbles and edges are crisp. Turn with a spatula or pancake-turner, and cook on the other side. Serve immediately on warmed plates.

Batter cakes are also known as griddlecakes.

Of what material are griddles made? What do they cost? How should they be cared for?

Perhaps some of the class will make waffles instead of the batter cakes. Some one will have a good recipe, or one may be found in the cook book.

EGGS

Hen, duck, goose, turkey and guinea-fowl eggs are used for food in this country. The *hen's egg* is the one most commonly found in the market. Perhaps the members of this class who live in the country have used some other kinds of eggs.

The egg has in it food for the baby chick and for that reason contains all the foodstuffs required for its growth. When the chemist divides the egg

into its parts he finds about 12 per cent of protein, about 9 per cent of fat and, in addition, water and mineral matter. Eggs may replace meat in the diet because they contain a large amount of protein, which is easily digested and used in the body.

When buying eggs in the market it is often difficult to get them fresh. A *fresh egg* need not be newly laid, but must be in good condition for human food, although it may be several days old. Eggs that have been treated or stored are not fresh eggs.

Eggs cannot be kept in good condition for a long period unless some method of preserving them is used. The shell of the egg is porous and allows bacteria from the air to pass through, thereby causing the egg to spoil. The home methods found to be best for preserving eggs are by the use of *water glass* or *lime water*. These materials may be purchased from the druggist and should be combined with clean boiled water. After the eggs are placed in the liquid, the container should be kept in a cool place. Eggs that are laid in April, May, or June are the best for preservation, and are also lower in price than at any other season. Large numbers of eggs are put in cold storage every year and these are the eggs that are sold during the winter as "*storage*" or "*packed*" *eggs*.

Eggs are usually sold by the dozen, but as they vary greatly in size and weight, it would be better if they were sold by weight.

Eggs that are "soft-cooked", at a temperature below that of boiling water, are most easily and quickly digested. "Hard-cooked" or hard-boiled eggs are thoroughly digested when not eaten hurriedly.

Eggs are very good for children, and are among the first foods added to the milk diet of the small child.

LABORATORY EXERCISES

EGGS FOR BREAKFAST

SOFT-COOKED EGGS

Never cook an egg at boiling temperature, as this makes the white tough. Place one egg in a pint of boiling water in the top part of the double-boiler. Place boiling water in lower part of double-boiler. Remove from fire and set in warm place. Cook for the length of time desired — five minutes for a soft-cooked egg, seven to ten for a medium-cooked egg. If the eggs have come out of the refrigerator and are very cold it will require a longer time to cook them.

How shall soft-cooked eggs be served for breakfast?

HARD-COOKED EGGS

Place one egg in a pint of boiling water, remove from fire, cover tightly; set in a warm place forty-five minutes to one hour. Using a double-boiler for this is a good method.

Place one egg in a pint of boiling water. Boil for twenty minutes.

When the two eggs are done, examine the whites. Which is the more tender?

What are some of the ways in which to use hard-cooked eggs?

POACHED EGGS

Have a frying-pan two thirds full of water at simmering point, to which salt has been added. In this may be placed muffin rings if they are available. Break each egg separately, pour carefully into muffin ring or water. Do not allow the water to boil. When the egg-white is firm, remove eggs from water, using a pancake-turner. Place each egg on a piece of buttered toast arranged on a warmed platter.

SCRAMBLED EGGS

3 eggs
$\frac{1}{4}$ c. milk
$\frac{1}{16}$ tsp. pepper
$\frac{1}{8}$ tsp. salt
1 tbsp. butter

Beat eggs slightly, add milk and seasoning. Melt butter in top of double-boiler, turn in mixture and cook very slowly, stirring often until white is set. Serve on warmed platter. Bits of chopped ham or other meat may be added if desired.

PUFFY OMELET

4 eggs
2 tbsp. milk
1 tsp. salt
Pepper

Separate the yolks and whites of the eggs. Beat the yolks of the eggs until "creamy" and add the milk, salt and pepper. Beat the whites until they are stiff. Pour the yolks over the whites and fold together carefully. Place in a frying-pan one tablespoon of butter. When it is melted pour in the omelet. Cook on top of the stove until the omelet is slightly browned on the bottom. Set in oven and bake slowly until omelet is "set" and browned on the top. Have ready a warmed platter. Loosen the omelet from the pan with a spatula. Slide it half-way from the pan to the platter and then fold the half of the omelet in the frying-pan over the half on the platter. Serve.

FOLDING THE OMELET AS IT COMES FROM THE PAN

Grated cheese, minced ham, or chopped parsley may

be sprinkled over the omelet before it is folded, in order to vary the flavor.

An omelet-pan may be used in place of the regular frying-pan in making the omelet.

REVIEW QUESTIONS

1. What kinds of eggs are used for food in this country?
2. What foodstuffs does an egg contain?
3. What food may eggs replace in a meal? Why?
4. What other food have we studied which is similar in food value to eggs?
5. What is a fresh egg? a packed egg?
6. Have you ever seen eggs being packed at home for winter use? How was it done?
7. What is the price per dozen for packed eggs? for fresh eggs?
8. Weigh three small eggs, then weigh three large eggs. What is the difference in weight per dozen? What does this prove about purchasing eggs by count or by weight?

THE DINING ROOM

The *dining room* should be a light, cheerful room, situated so that the sunlight reaches it at some time every day, preferably in the morning. This room should be large enough to permit easy passing behind the chairs when persons are seated around the table.

The *walls* should be finished in light colors rather than dark, which tend to make the room appear gloomy. The window curtains should be of a kind easily laundered, since draperies in a dining room are apt to hold dirt and odors and need frequent cleaning.

The *floor* is best made of hard wood, as a rug may then be used instead of a carpet. A dining-room floor would be more sanitary if no covering were used, but the noise made by using a bare floor is annoying to many persons.

The *furniture* should be plain in design. Wood or cane-seated chairs are perhaps better to use than upholstered, because they are easier to keep clean. A *dining-table* with a top having a waxed finish is much better than one highly varnished. The top of the *sideboard* and *serving-table* should not be crowded with dishes of various kinds. A dining room is more pleasing with few pictures, or none at all, and with little bric-a-brac or few dishes used as decoration.

When buying a *"set" of dishes* it is best to select a style with simple decoration or without decoration. Large conspicuous designs and bright colors become tiresome when the dishes are used often. A good quality of china with no decoration is a wise choice for a "set", because any type of decorated dish looks well with it.

Silver knives and forks should be of the same pattern, but the spoons may be of different design. Silver never looks well unless it is kept polished.

White *linen tablecloths* and *napkins* are better to buy than cotton, because linen wears longer and launders much better than cotton. *Luncheon sets* of various types may be used instead of a tablecloth, and are much easier to launder.

HOME PROBLEMS AND QUESTIONS

Collect pictures of dining-room furniture; of the interior of dining rooms. Bring them to class for discussion. Perhaps, if there is a furniture dealer in the community, you or the teacher can get furniture catalogues that will be good to study.

Which types of chairs are best for the dining room? Why? Do the chairs in the pictures seem too heavy

to move about easily? Are they well braced? Observe whether they would be hard to dust.

What types of tables are best for the dining room? Why?

Which type of sideboard is best?

For what purpose is a side-table used? What is a buffet?

See if you can find samples of the kind of curtain material you think would be good for a dining room.

If your teacher has a sample-book of wall paper, find a sample of the colors you would like to have on the walls of your dining room.

What kind of floor-covering would you like?

You may like to mount on sheets of paper pictures of the furniture you would select to use in your dining room; if you have a sample of curtain material, rug and wall paper that you like, you can mount these. Then make a floor-plan of your room, showing the size of the room, the windows, the doors, and where the china closet is placed. Arrange the furniture in the room. On another sheet make a list of the prices of all the furnishings in the dining room. What is the total cost of furnishing? Tie these sheets together and make a cover for them.

LABORATORY EXERCISES

MEAT DISHES FOR BREAKFAST

BROILED BACON

Place in a hot frying-pan thin slices of bacon from which the rind has been removed. Turn several times during the cooking. When the bacon is crisp, not burned, drain from the fat carefully and serve on a warmed platter.

Bacon may be purchased by the piece, sliced in bulk, or sliced and packed in sealed containers. In which form is bacon the cheapest by the pound? Why?

CREAMED DRIED BEEF

Place two tablespoons of fat in a small frying-pan; when it is melted, add about three slices of dried beef torn in pieces. Stir about three minutes, add one cup of milk. Mix thoroughly one tablespoon of flour with two tablespoons of milk; add slowly to the scalding hot milk. Stir to prevent lumping. Cook slowly five to ten minutes. Serve on toast arranged on a warmed platter.

In making this white sauce, why is the flour mixed with milk instead of with fat?

How is dried beef made? Perhaps the butcher will tell you. What does it cost per pound?

What are some other meat dishes that would be good for breakfast? If you have time, try one of these.

TABLE MANNERS

No matter how educated or pleasing in character one may be, the impression made upon others is not good if one's manners are poor.

Certain *rules* for table behavior or manners have been adopted because they make the eating of the meal easier and more graceful, and the serving of it more convenient.

The following are a few rules that should be observed always when at the dining-table:

1. Never go to the table unless hands and face are clean and the hair is in order.

2. Stand behind your chair until the hostess takes her seat.

3. The napkin should be laid across the lap without being entirely opened out. Never stick the

corner inside the collar. If the napkin is to be used again, fold it neatly before leaving the table.

4. The knife should be held in the right hand and the fork in the left when they are used at the same time. Hold the knife and fork so that the end of the handle touches the palm of the hand. The point of the index-finger is on the top of the handle of the fork at the lower end, but not on the tines. The knife must be laid on the plate when not in use. Both knife and fork should be placed side by side on the plate when one has finished using them at the end of a course. The fork, when being used to carry food to the mouth, may be held in either hand, and may be held in much the same position as when used with the knife, or like a spoon.

PROPER WAY TO HOLD KNIFE AND FORK

5. The spoon should be held in the right hand, and such food as soup, tea, or coffee should be taken from the side of the spoon. A spoon used for stirring tea or coffee should be laid on the saucer after use and before drinking from the cup.

6. Always sit erect in the chair while eating. Keep the arms and elbows off the table.

7. Never eat hurriedly.

8. Do not talk when the mouth is full of food.

9. Ask politely for dishes to be passed, rather than reach across the table.

10. Never complain about the food. If it is not the kind desired, it need not be eaten.

11. If it is necessary to leave the table before the others are ready, ask to be excused by the hostess.

12. Do not talk about disagreeable things during the meal.

HOME PROBLEMS AND QUESTIONS

The following breakfast will be served during the next laboratory period:

Orange	Toast
Oatmeal	Cocoa

Make a list of the dishes and silver that will be needed in setting the table and serving the meal.

Decide how much of each food will be required for serving the number who are to eat the meal.

Decide the order of work for preparation of the meal, — that is, which food must be put on to cook first, which second, etc.

What will the food cost for each person?

LABORATORY EXERCISES

SERVE A BREAKFAST

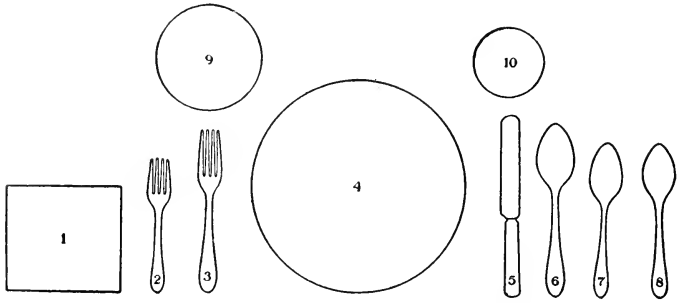
Setting the table: Place the *table-pad* or *silence-cloth* on the table. Over this lay the cloth, arranged straight and smooth. If a center doily is used, place this in the middle of the table. Doilies and table-runners may be used, instead of a tablecloth, for breakfast, luncheon and supper. Asbestos pads should be placed under all hot dishes when doilies or runners are used on a polished table.

A *cover* means the space with the silver, glass and china allowed for each person. Enough space must be

allowed so that no one is crowded. Twenty-two inches is the least space that should be used.

At the center of each cover place a plate, the kind depending on the meal that is served. For breakfast it will probably be the fruit-plate. At the right of the plate place the knife, with its sharp edge toward the plate and the end of the handle about one inch from the edge of the table. Next to the knife place the spoons, with the bowls up.

At the left of the plate, place the fork or forks with the tines up and the end of the handle about one inch



ARRANGEMENT OF "COVER" FOR DINNER

1, Napkin; 2, Salad Fork; 3, Dinner Fork; 4, Dinner Plate; 5, Dinner Knife; 6, Soup Spoon; 7, Dessert or Sauce Spoon; 8, Coffee Spoon; 9, Butter Plate; 10, Water Glass.

from the edge of the table. To the left of the fork lay the neatly folded napkin.

At the end of the knife, place the glass, right side up. At the end of the forks, place the bread-and-butter plate.

When flowers are used they should be low, or not high enough to obstruct the view across the table.

The dishes from which foods are to be served should be placed conveniently for those doing the serving. Place the serving-spoons and the carving-knife and fork where they will be needed, but do not place them in the dishes before beginning the serving.

Cups and saucers, sugar-bowl and cream-pitcher, should be placed in front of the hostess, with the coffee-pot or teapot at her right.

The table should never look crowded with dishes. When the hostess is serving the meal, a tea-cart at her side may be used for holding dessert-dish, bread-plate, water-pitcher, etc.

Place the chairs so that the edge of the seat just touches the tablecloth, but does not keep it from hanging straight.

STYLE OF SERVING

There are three methods of serving meals:

1. *English*, used in ordinary family service. Foods are served at the table by the host and hostess and other members of the family. The served dishes may be passed by the household helper, or passed from one person to another at the table. The hostess usually serves the soup, salad and dessert; the host serves the meat and vegetables. This is the style of serving used in most American homes.

2. *Russian*, used for very formal meals. Each plate is served in the kitchen and placed in front of the guest by the household helpers; or the empty plates are placed before each guest and the serving-dishes are passed to each person by the household helper. No serving-dishes are placed on the table. This form of service is not practical for the ordinary family, because it requires more work than the English service.

3. *Combination*, used for informal meals. This is a combination of the two other styles. For example, the soup or salad is served in the kitchen, and the meat and vegetables are served at the table.

Every hostess may follow her own ideas about serving, as far as details are concerned, but a few general rules should be followed.

1. Serving-dishes from which the guest is to serve himself must be passed to the left of the guest. Why?

2. Plates that have been served are placed in front of the guest from the right side. Why?

SERVING-DISH PASSED TO THE LEFT

3. Used plates are removed from the right side when it is possible to do it conveniently.

4. When removing dishes between the courses, use the following order: remove the used dishes, then the dishes containing food, next the clean dishes and silver that will not be needed further, then the crumbs from the cloth (if necessary). A table never looks attractive when dirty dishes from

one course remain during the next course, and even at the most informal meals it is better to remove dishes between courses. This work may be done by the daughter. When the family is very small, sometimes the dirty dishes are placed on a side-table or tea-cart, from which the dessert is taken, thereby saving the housekeeper steps in serving.

5. In removing dishes from the table, when serving an informal meal, they may be placed on a hand-tray for carrying to the kitchen. Never "stack" dishes at the table or for removing from the table.

Set the table for breakfast. Practice serving.

If no dining-room furniture is available, the supply-table may be used. Perhaps dishes to use in setting the table may be borrowed until the school can get such equipment. If no other way is possible, let every member of the class arrange a cover at the laboratory desk, using laboratory dishes. This is never a desirable plan, however, because the equipment does not supply the best type of dishes nor the proper kind.

LABORATORY EXERCISES

SERVE A BREAKFAST

Suggested Menu: Orange Toast
Oatmeal Cocoa

Discuss order of work.
Discuss equipment needed.
Discuss china and silver needed.
Would this type of breakfast suit every family? Why?
Review recipes.
Cook and serve meal.

Several lessons might be given on serving breakfasts.

THE PLAN FOR SUPPER OR LUNCHEON

In some families the meal served at noon is called luncheon and is followed by dinner in the evening; in others, dinner is the meal served at noon, followed by supper in the evening. *Luncheon* and *supper* are simpler meals than dinner.

The plan varies greatly under different conditions, but the usual types of food served are meat or meat-substitute dishes, salads, vegetables, bread in some form and perhaps a simple dessert or cake. "Quick breads" are often used for luncheon or supper.

Many consider a cream soup, a vegetable salad, bread, stewed fruit and cookies a good combination for such a meal, while other families prefer a meat dish, a hot vegetable, and bread; still others may consider bread and milk a satisfactory menu. No family needs, in one meal, foods of all the types suggested.

Luncheon or supper is a meal for which it is convenient to use the "*left-overs*" in various ways. Bits of meat may be combined with other foods to make attractive dishes. Small portions of vegetables may be made into salads or soups, or combined with meat. Sometimes a salad is made of left-over fruit, and used at the end of the meal in place of a dessert.

Some housekeepers are very wasteful in throwing into the garbage-can small bits of clean food that may be left from a meal. Often persons object to "left-overs", but this is usually the case when the housekeeper has not learned how to make them into dishes which are well flavored and pleasing in appearance.

When bits of meat are left from a meal they should

be put in a covered container and placed in the ice-box or some other cool place. Vegetables with a strong flavor should be covered if put in the ice-box. All "left-over" food should be used promptly and not left to spoil.

The cost of food should be considered, and if anything can be saved by careful watching and planning it is a part of the housekeeper's business to do this.

There are several ways of reducing the amount of money to be spent for food: (1) buy the foods that are in season; (2) buy those which contain the greatest food value, these are not always the highest priced; (3) buy in quantity any foods that can be properly stored; (4) prepare and cook carefully, so that nothing shall be wasted; (5) save every part of the food that is fit for use.

LABORATORY EXERCISES

CREAM SOUPS

CREAM OF TOMATO SOUP

Make one cup of No. 1 White Sauce. Strain cooked tomatoes through a wire sieve, using one half cup of juice. Place tomato-juice in saucepan, heat, add one sixteenth teaspoon soda. Add the heated tomato-juice to the white sauce. Re-heat and serve in warmed soup-plates.

Try mixing one tablespoon tomato-juice and one tablespoon of milk, and see what happens. The soda prevents this action, which is the curdling of the milk.

CREAM OF CORN SOUP

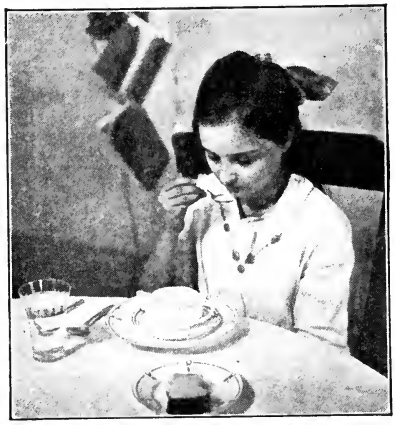
½ c. stewed or canned corn	1 tsp. flour
1 c. milk	1 tbsp. butter

Make a white sauce of the milk, butter and flour. Less flour is needed for thickening, because the corn will help thicken the soup.

Heat the corn and press through the vegetable-ricer. Add corn to the white sauce. Re-heat. If desired, a spoonful of whipped cream may be placed in each soup-plate and the soup poured over it.

TO SERVE WITH SOUPS

Soup-sticks. Butter slices of bread. Cut into strips. Brown them slowly in the oven.



CORRECT METHOD OF HOLDING SOUP OR BOUILLON SPOON

Croûtons. Cut buttered slices of bread into cubes. Brown in oven.

Wafers. Heat salted wafers in oven until crisp.

Parsley. Chopped parsley is sometimes sprinkled over the top of cream soups as a garnish.

Celery. Crisp celery is always good to serve with soups.

If possible, bring from home other recipes for cream soups.

REVIEW QUESTIONS

1. What are the foods usually served for luncheon or supper? Should all of these be served in the same meal?
2. What are "left-overs"? How may they be used?
3. How should "left-overs" be cared for?
4. Why do some persons object to "left-overs"?
5. How may the housekeeper reduce the amount of money spent for food?
6. Name some foods that are "out of season" at the present time. Why are they expensive?
7. State ways in which food is wasted in cooking.
8. When should soda be added to tomato soup? Why?
9. Are cream soups of much food value? Why?

10. Name some foods that should not be served when cream soups are used in the meal plan. Explain.
11. Make several supper or luncheon plans.

MEAT SUBSTITUTES

Such foods as cheese, milk, poultry, nuts, dried peas, beans, lentils, cowpeas and soy beans are sometimes used in the diet in the place of meat, and are commonly called *meat substitutes*.

In the United States, people eat more meat per person than in any other country, and more than is necessary. This is because the flavor of meat is very much liked, because meat is easily cooked, and because it is popularly believed to be necessary for the best muscular work. It has been found, however, that meat may be replaced, for a part of the time at least, by other foods that contain a large amount of protein, without injury to the body and without loss in muscular strength. If meat is high in price it is well to remember this fact when planning meals.

Cheese is a product made from milk. When divided into its parts by the chemist, cheese is found to contain about one third water, one third fat and one third protein. Cheese is usually divided into two classes: (1) hard cheese, such as American Cheddar cheese, Edam and Roquefort, and (2) soft cheese, such as Neufchâtel, Camembert and cottage cheese.

The cheese most commonly found in the market is American Cheddar cheese, sometimes called "American cheese" or "New York cream cheese." The States making the most cheese are New York and Wisconsin. Much of our cheese comes from foreign countries, as for example, Edam cheese from Holland, and Neufchâtel from France.

Cottage cheese is often made at home when there is an extra supply of milk; or skim milk may be used.

American cheese is usually purchased by the pound. A large family may find, however, that purchasing a whole cheese is a better plan, as the cost will be less. Cheese that is to be kept for several days after it has been cut should be placed on a plate and left uncovered in a dry clean place, or it may be covered with a cloth.

Some persons consider cheese hard to digest, and this may be so when it is eaten too hurriedly, or eaten after a meal at which enough food has already been eaten. When ground or grated cheese is combined with other foods, it is well digested by most persons.

LABORATORY EXERCISES

CHEESE

If there are several kinds of cheese sold in the local market it would be interesting to have a sample of each type in the laboratory for examination. Observe the texture and flavor. What is the price of each kind?

CHEESE SOUFFLÉ

½ c. No. 4 White Sauce	3 eggs
¼ c. grated cheese	Few grains cayenne

Add the cheese and cayenne to the hot white sauce. Beat the yolks of the eggs until they are thick and lemon colored; pour slowly over these the white sauce. Mix carefully. Let stand until cool. Beat the whites of the eggs very stiff. When white-sauce mixture is cool, fold in the stiffly beaten egg-whites. Turn into a buttered baking-dish, set the dish in a pan of warm water and bake in a moderate oven until firm. Serve at once. The baking-dish may be placed in a holder made for the purpose,

or it may be wrapped with a napkin before being placed on the table.

CHEESE STRATA

In the bottom of a buttered baking-dish place thin slices of bread, over this pour hot No. 3 White Sauce, on this a layer of grated cheese, then layers of bread, of white sauce, and more cheese, until the dish is filled. Cover the top with buttered bread crumbs. Bake in a slow oven about thirty minutes. Serve in baking-dish.

WELSH RAREBIT

¼ lb. grated cheese	1 egg
¼ c. cream or milk	2 tsp. butter
½ tsp. mustard	Few grains cayenne
½ tsp. salt	Toast

Place the cheese, mixed with the cream or milk, in top part of double-boiler and heat until the cheese is melted. Then add the beaten egg, to which the mustard, salt and cayenne have been added; then add the butter. Cook until it thickens, stirring constantly. Pour over toast. Welsh rarebit is often made in the chafing-dish.

BREAD CRUMBS

All crusts and pieces of bread should be saved for bread crumbs. Dry them in a slow oven. Put through a food-grinder, or crush by placing on a bread-board and using a rolling-pin. Store the crumbs in open jars, never in tightly closed containers. If the crumbs are to be kept for several weeks or months, a cloth should be tied over the top of the container.

Buttered bread crumbs, to be used on the top of escalloped dishes, are prepared as follows:

1 c. bread crumbs	2 tbsp. butter
Salt and pepper, if desired	

Melt the butter in a frying-pan. Add the crumbs with which the seasonings have been mixed. Stir until the butter is thoroughly mixed with the crumbs.

Other cheese dishes may be made if desired.

The class may be divided into groups and each group make one recipe, the others copying the recipe. When family-size recipes are used, perhaps some of the products may be sold, either to individuals or in the lunch-room if there is one.

REVIEW QUESTIONS

1. Name the meat substitutes.
2. Why are they called meat substitutes?
3. From what is cheese made?
4. What does the chemist find that cheese contains?
5. Into what two classes is cheese divided?
6. Name some examples of each class.
7. Which is the most commonly used cheese?
8. How is cottage cheese made?
9. Find out, if you can, how American Cheddar cheese is made.
10. How is cheese kept in the grocery?
11. What is the price per pound of American Cheddar cheese?
12. How should cheese be kept in the home?
13. Make a luncheon or supper plan in which each of the cheese dishes made in the laboratory might be served.

MEAT SUBSTITUTES (*Continued*)

NUTS

Nuts in general contain a large amount of fat and protein and may sometimes be substituted for meat in the diet. They may be used in their natural form, or they may be ground and combined with other foods.

Peanuts are often used for making "peanut butter", which is a very valuable food.

English walnuts, almonds and *peanuts* are the varieties of nuts most used. These are cultivated nuts, grown in the Southern States and California. *Black walnuts, hazel nuts, hickory nuts, pecans* and *chestnuts* grow wild in some parts of the United States.

Nuts should not be eaten at the end of a meal when one has already taken the food needed. Nuts may be hard to digest when eaten at this time, or when they are not chewed thoroughly.

DRIED LEGUMES

Peas, beans, lentils, soy beans and *cowpeas* belong to the class of vegetable foods called legumes. They contain a large amount of protein, fat, carbohydrate and mineral matter.

Dried beans, peas and lentils are foods used especially in winter. When serving them it is not necessary to use meat at the same meal. Cowpeas and soy beans, while not so common, are used in the same way as beans, peas and lentils.

Legumes may be baked, boiled or combined in some way with other foods. Dried legumes require long periods for cooking. A fireless cooker is very useful when cooking legumes, or the pressure-cooker can be used and the time required much shortened.

Dried legumes must be *thoroughly cooked* to make them good for food, since the cellulose in them is tough. They are often soaked in water for several hours before cooking.

Dried legumes are usually purchased by the pound. Buying in quantity makes the cost less.

LABORATORY EXERCISES

DRIED LEGUMES

Examine samples of beans, dried peas, split peas, lentils, soy beans and cowpeas. Compare the price by the pound. Which of these may be purchased at groceries in the neighborhood? Try the seed-store for cowpeas and soy beans.

BAKED BEANS

1 qt. white beans
1 tsp. soda
¼ lb. salt pork
1 small onion, if desired
1 tsp. mustard
½ c. molasses
Salt, if needed
Cayenne, if desired

Pick over, wash and soak beans in cold water overnight. Pour off any water remaining. Put in kettle, cover with water, add soda and boil gently until the beans are slightly softened. This boiling is sometimes called "parboiling." Drain again. Put the beans into the bean-pot. Cut the pork into slices, but do not remove from the rind; press down into the beans with rind up. Place sliced onion on top. Mix the molasses, mustard, salt and cayenne with one pint of boiling water and pour over beans. If liquid does not show on the surface, add more boiling water. Cover pot. Bake in slow oven six to eight hours. Uncover during the last hour, so that the beans will brown on top. A fireless cooker or oven may be used for baking beans.

A Bean-pot Used for Baking Beans

NUT AND CHEESE LOAF

1 c. cottage cheese
1 c. nut meats
1 c. bread crumbs
Juice of ½ lemon
¼ tsp. pepper
1 tsp. salt
2 tbsp. chopped onion
1 tbsp. fat
¼ c. water or meat stock

Grind the nuts; mix the cheese, nuts, salt, pepper, crumbs and lemon juice. Cook the onion with the fat and water, or with the meat stock, until it is tender; add to other ingredients. Mix thoroughly. Pour into

greased baking-dish. Bake about twenty minutes. Serve with tomato sauce.

TOMATO SAUCE

1 c. tomato-juice
2 tbsp. flour
1 tbsp. fat
1 slice onion
Salt and pepper

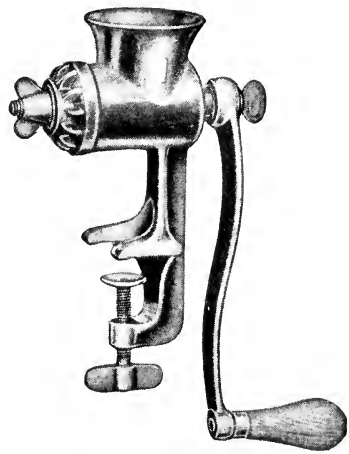
Boil the onion in the tomato-juice for three minutes. Remove the onion. Continue as for any white sauce.

PEA SANDWICHES

¼ c. pea pulp
1 tbsp. chopped nuts
1 tbsp. grated cheese
Lemon juice

Press canned peas through the vegetable-ricer. Measure the pulp, add the cheese, chopped nuts and enough lemon juice to make the right consistency for sandwich filling. Spread between thin slices of bread.

Plan a meal in which such sandwiches would be suitable to serve.



FOOD-GRINDER

Used for grinding meat, vegetables, nuts, cheese, bread and other foods.

REVIEW QUESTIONS

1. What foodstuffs are found in large amounts in nuts?
2. Which are the nuts commonly used in this locality?
3. What is the price per pound of peanuts? English walnuts?
4. Is it more expensive to buy them shelled?
5. How many pounds of peanuts in the shell does it take to make one pound of shelled nuts?
6. How is peanut butter made?
7. What are the commonly used dried legumes?

8. What foodstuffs do they contain?
9. Why are they called meat substitutes?
10. Why are dried legumes soaked in water?
11. How should dried legumes be cooked?

SALADS

Salads may be made from vegetables, fruits, or meats; or they may be a combination of vegetables and fruits, or of meats and vegetables to which has been added some kind of dressing and perhaps small amounts of other materials to give flavor.

Salad dressings are of three types: mayonnaise, French and cooked dressing, and each type may be varied, making many kinds.

Lettuce is used in the making of many salads, often only as a "garnish" which is used to make a dish more attractive. Lettuce always should be clean, crisp and cold when used for a salad. *Celery tops, endive, nasturtium leaves, water cress* and other garnishes are sometimes used for salad.

Salad oil is one of the materials used in some dressings. Salad oil may be made from olives, when it is called *olive oil;* or it may be made from corn or cottonseed, when it is usually sold by a trade name. When buying salad oil one should examine the label on the can or bottle, to see whether the oil is made from olives or other material, since oil made from corn or cottonseed should not be sold at so high a price as olive oil.

Eggs often form a part of the salad dressing and, when they are combined with the oil and used on the salad, add to its value as a food. Whipped cream also adds to the food value of a salad.

When *meat salads* are served for luncheon or

supper, no other meat dish is needed. *Vegetable salads*, when made of the legumes, can be used as a meat substitute. *Fruit salads* can be substituted for dessert in many meals.

Besides being used as a part of a meal, salads are often served with sandwiches as "refreshments."

An *attractive salad* should have the following qualities: freshness, crispness and coolness; it should have an appetizing flavor, and should combine well with the other food served in the meal.

LABORATORY EXERCISES

SALADS, SALAD DRESSINGS

Use a corn oil, a cottonseed oil and olive oil in making the following dressings. The class may be divided into groups for the work. Compare the price of the three kinds of oil. Compare the taste of the dressings.

Lettuce should be washed, dried on a cloth, and be thoroughly crisp before it is used with salads.

FRENCH DRESSING

1 tbsp. sugar	$\frac{1}{4}$ tsp. paprika
2 tbsp. vinegar	$\frac{1}{8}$ tsp. salt
4 tbsp. oil	$\frac{1}{8}$ tsp. white pepper

1 tsp. scraped onion, or onion juice

To the dry ingredients add the onion and the vinegar; stir thoroughly, add the oil, beat until of a thick creamy consistency. French dressing may be made in quantity and kept for several days in a cold place. Beat thoroughly every time it is used.

MAYONNAISE DRESSING

1 egg-yolk	$\frac{1}{2}$ tsp. sugar
$\frac{1}{4}$ tsp. salt	$\frac{1}{2}$ tsp. mustard
$\frac{1}{8}$ tsp. paprika	$\frac{1}{2}$ c. oil

$1\frac{1}{2}$ tbsp. vinegar or lemon juice

The oil should be cold. Beat the egg-yolk with the Dover egg-beater until it is thick and lemon-colored; add dry ingredients. When the mixture is well blended, add a little of the oil; beat, add more oil; beat again. When the mixture is thick, add a little of the lemon juice or vinegar; beat. Then add more oil and vinegar or lemon juice, beating constantly. Sometimes, in making this dressing, the mixture separates or curdles and does not become thick. When this happens, beat another egg-yolk until it is thick, and add the salad dressing slowly to the egg, beating constantly. Keep in a cold place.

COOKED DRESSING

1 egg	½ tsp. salt
¼ c. vinegar	1 tbsp. sugar
½ c. milk	1½ tbsp. flour
¼ tsp. mustard	1 tbsp. butter

Paprika if desired

Make a white sauce from the flour, butter and milk; add the seasonings. Beat the egg until it is thick and lemon-colored. Gradually pour white sauce into the beaten egg,

THREE SALADS

Asparagus tips, potato and head lettuce.

stirring well. Place in double-boiler and cook five to ten minutes. Add the vinegar slowly. If there are lumps, strain through a wire sieve. Cool.

If the dressing is thicker than desired, it may be thinned with a little cream or milk when it is to be used. For some salads, whipped cream may be added to the dressing.

SALMON SALAD

½ c. salmon 1 small chopped sweet pickle
1 tbsp. chopped celery or shredded cabbage
Mayonnaise dressing

Drain oil from salmon, remove all pieces of bone and skin. Add the celery or cabbage and the pickle. Mix carefully with a fork. Add dressing. Place on a bed of shredded lettuce. Garnish with hard-cooked egg if desired.

BANANA SALAD

Peel and scrape a banana. Slice lengthwise and once crosswise. Arrange on lettuce. Use cooked dressing to which whipped cream has been added. Chopped nuts may be sprinkled over the top.

VEGETABLE SALAD

Cooked and fresh vegetables make good salads with the addition of French or cooked dressing. The following combinations are suggested:

Diced carrots, peas and chopped peanuts.
Green beans, chopped onion and parsley.
Potato, cucumber and green pepper.
Lima beans, carrots and peas.
Tomato; stuffed with cabbage, celery or cucumber.

REVIEW QUESTIONS

1. Name the types of salad dressings.
2. What kinds of oils may be used in making dressings?
3. Which is most expensive?
4. What is the use of a "garnish"? What are some materials used for garnishing?
5. When should meat salads be served? Prepare a plan for a luncheon or supper in which it is proper to serve salmon salad.
6. What kind of vegetable salad can be substituted for meat in the meal? Why? Prepare a plan for a meal in which "Lima bean, carrot and pea" salad is suitable.
7. Plan a luncheon or supper in which a fruit salad is suitable.

8. What are the characteristics of a good salad?
9. What may be served with salads?
10. Bring to class a good recipe for cheese crackers and one for cheese straws.
11. How should wafers be crisped when served with salads?
12. What is "head lettuce"? "leaf lettuce"? What is the price of lettuce?

LABORATORY EXERCISES

SERVE A LUNCHEON OR SUPPER

Suggested Menu: Cream of Corn Soup
Cabbage Salad
Bread and Butter
Baked Apple with Cream

Make other menus for supper or luncheon.

DRIED FRUITS

Drying is one way of preserving fruits. Many housekeepers on farms dry apples and other fruits at home, but a very much larger amount is dried by commercial firms. Many thousand tons of peaches, apricots, prunes and raisins are dried in California every year and shipped to all parts of the United States and to many other countries. Some of our dried fruits, such as dates, figs and raisins, come from foreign countries.

Prunes are a kind of plum that have been dried. *Raisins* are dried grapes. *Dates* are the fruit of the date palm. *Figs* come from the fig tree.

Apricots, peaches and *prunes* are usually purchased by the pound, and when packed in bulk should be carefully washed before using. They are often packed several pounds in a box, and if the whole box is purchased are cheaper in price.

Raisins, figs and dates of the best grade are sold in carefully wrapped packages. They can also be purchased by the pound. "*Seeded*" raisins are sold by the box, but it is well to look them over carefully to remove any seeds that may have been left.

Dried fruits, before *cooking*, should be washed carefully and then soaked in cold water overnight. The soaking shortens the time required for cooking and develops the flavor. They should be cooked in the water in which they have been soaked. A fireless cooker is useful in cooking dried fruits because they require long cooking.

Dried fruits are used in place of fresh fruits or canned fruit, and when well cooked make a good dessert for luncheon and supper, or served as the fruit dish for breakfast.

LABORATORY EXERCISES

DRIED FRUITS

Experiment : 1. Wash one half pound each of dried peaches, prunes and apricots; to each add one pint of water. Soak overnight. Drain off and save any remaining water. How much does each fruit weigh? Explain what has happened.

2. Place the prunes in a closely covered kettle, add liquid in which they were soaked. Set kettle inside of large kettle of fireless cooker, fill cooker kettle half full of hot water. Cover cooker kettle. Place on hot radiator in cooker. Cook about three hours. Do not open the cooker during this period. Remove prunes from cooker, add one half cup of sugar and boil for ten minutes over direct heat. Serve cold.

3. Place apricots in a saucepan, add liquid in which they were soaked, cover saucepan. Place over fire

and simmer gently until fruit is tender. Hot water may be added if necessary. Add one half cup sugar, and heat until sugar is melted. Serve cold.

4. If there is a steam cooker in the laboratory, cook the peaches in this. Follow the same directions as for Experiment 2, except that the small kettle can be set directly on the shelf of the steam cooker.

5. Compare the fruit cooked in the different ways, as to appearance. Which is the most economical way of cooking?

PRUNE WHIP

1 egg-white
1 c. prune pulp
1 tbsp. lemon juice

Remove the seeds from the cooked prunes, rub prunes through a wire sieve, add lemon juice. Heat pulp. Beat egg-white very stiff. Add prune pulp gradually, folding it into the egg-white. Pile on serving-dish. Chill and serve as dessert.

DATE PUDDING

¾ c. sugar
2 eggs
¼ c. flour
1 c. chopped English walnut meats
1 tsp. baking powder
1 c. dates, seeded and chopped into small pieces
⅛ tsp. salt

Beat the eggs slightly, add the sugar, beat until creamy. Mix dates, nuts, baking powder, flour and salt, and add to first mixture. Mix and turn into a greased baking-dish. Bake in moderate oven twenty to thirty minutes, or until the pudding just becomes firm. Serve hot or cold with whipped cream.

REVIEW QUESTIONS

1. Name the dried fruits you have seen.
2. What fruits are often dried at home?
3. What methods are used in drying fruits at home? Farmers' Bulletin No. 841, "Drying Fruits and Vegetables in the Home",

from Division of Publications, U. S. Dept. of Agriculture, Washington, D. C., will tell you how fruits are dried.

4. What fruit are prunes? raisins?

5. From which countries do we obtain dates, figs and raisins?

6. What is the price per pound of apricots, prunes and dried peaches?

7. In what kinds of packages may dates, figs and raisins be purchased?

8. What is the price of the ordinary package of dates? of figs? Read the label on the package to find weight of contents.

9. Give general directions for cooking dried fruits.

10. Plan a luncheon or supper in which date pudding might be used correctly as the dessert.

QUICK BREADS

All breads are *divided* into two classes, (1) quick breads and (2) yeast breads. Quick breads are made in a shorter time than is required for making yeast breads, and are generally served hot.

A *quick bread* requires the following ingredients: flour, a liquid, salt and a leavening agent. To these may be added some other ingredients, not necessary but often desired, such as shortening, sweetening, flavoring and eggs.

White, whole wheat and Graham flours, and corn meal, are generally used in the making of quick breads. Other flours that can be used are corn, rice, rye, buckwheat, barley and potato flours. *Corn meal* is used more extensively in the South than elsewhere in the United States. Since corn is a cereal it is a very valuable food; therefore corn meal and other corn products should be used in greater quantities than they are in most families. There

are two kinds of corn meal, (1) yellow, made from yellow corn, and (2) white, made from white corn. The flavor differs slightly.

The material added to any bread to make it "light" is called a *leavening agent.* The leavening agents commonly used are air, steam, baking powder, soda and yeast; all except the last are the ones used in quick breads.

Air is added by beating eggs very light and folding them into the flour mixture, or by rapidly beating the flour mixture itself. The air expands when heated, causing the mixture to rise.

When the heat in the oven turns the water which is in the flour mixture into steam, further heat causes the steam to expand, and this causes the flour mixture to stretch, thus making it "rise." Popovers are a kind of quick bread made to rise with air and steam.

Baking powder is a compound made of baking soda, an acid substance and a starchy material. The acid substance used varies with different baking powders. Some of the good baking powders are made by combining cream of tartar (the acid substance), baking soda and starch. Whenever baking soda is put with an acid and moisture is added, carbon dioxide gas is formed. This is what happens when baking powder is put in a flour mixture, — the baking powder supplying the acid and soda, while the moisture is supplied by the flour mixture. When heat is applied, this gas expands the flour mixture and causes it to rise.

Baking powder is used when sweet milk or water is the liquid used in the flour mixture.

It is never wise to buy cheap baking powder,

for it is often poorly made and does not produce good results.

Baking soda is used with sour milk or buttermilk. The sour milk and buttermilk contain the acid needed to combine with the soda to form the carbon dioxide gas. Soda is often used when molasses is needed in the recipe, because some kinds of molasses contain a good deal of acid; but much molasses that is now sold is not very acid, and soda must be used with it carefully. Baking soda is difficult to use correctly with milk in cookery because the amount of acid present in the milk varies.

HOME PROBLEMS AND QUESTIONS

Make a list of the brands of baking powder that you have seen advertised or used. In what kind of container is baking powder sold? Why?

What is the difference in price per pound when baking powder is bought in a one pound container, one half pound and one fourth pound?

Is corn meal sold by the pound or in the package?

Which is the more commonly used in this locality, white or yellow corn meal? Why?

Make a list of firms making flour which you have seen advertised. Is there a flour mill in the neighborhood? If so, perhaps the teacher can arrange to go through the flour mill with the girls. In that case, write down all the processes through which the wheat goes in becoming flour.

LABORATORY EXERCISES

QUICK BREADS

In all recipes sift the flour before measuring.

BAKING-POWDER BISCUITS

½ c. milk	2 tsp. baking powder
1 c. flour	1 tbsp. fat
	½ tsp. salt

Add the salt and baking powder to the flour; sift again. Cut the fat into the flour, using two knives. Add the liquid and mix quickly. Place on floured board, roll one half to three fourths inch in thickness, cut with biscuit-cutter, place in baking-pan. Have oven hot when biscuits are put in. Bake fifteen minutes.

MUFFINS

2 c. flour	2 tbsp. sugar
4 tsp. baking powder	1 c. milk
¼ tsp. salt	2 tbsp. melted butter
	1 egg

Sift flour, baking powder, salt and sugar together. Beat egg slightly, add milk. Stir the flour mixture into the liquid, add the melted butter. Place in greased muffin tins. Have oven moderately warm when muffins are put in. Bake about twenty minutes.

SOUTHERN SPOON CORN BREAD

2 c. white corn meal	2 eggs
2½ c. boiling water	1½ c. buttermilk
1½ tbsp. melted fat	1 tsp. soda
	1½ tsp. salt

Add corn meal gradually to boiling water and let stand until cool. Beat egg yolks slightly; add salt, buttermilk and soda; mix immediately with corn meal. Beat two minutes, add the stiffly beaten egg-whites. Put in buttered baking-dish. Bake in a moderate oven forty-five minutes.

CAKE

Cake, well made and well baked, is not harmful if eaten slowly and not in too great quantity.

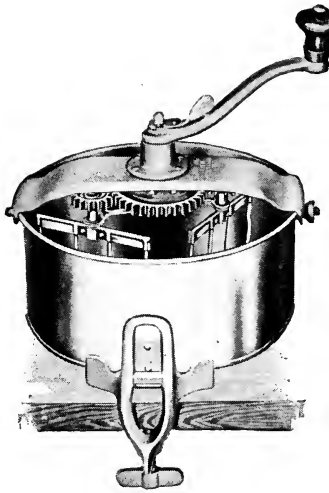
Children should not be allowed to eat large amounts of cake because it contains a good deal of sugar, and although sugar is a good food, yet when too much is eaten it may irritate the stomach and cause trouble in digestion. Then too, cake, like "new" bread, is so soft and tender that it is a temptation to swallow it without proper chewing. When too much cake is eaten it spoils the appetite for other more useful foods, such as milk and vegetables.

Cookies are best for little children because they are drier and require more chewing. Cake should be eaten at mealtime and not as a "piece" between meals.

All cakes may be placed in *two classes:* (1) those made without fat, such as sponge cake, and (2) those made with fat, such as plain butter cakes. A plain cake recipe may be varied in a great many ways, thereby affording different kinds of cake. Some of the materials that may be added to change the taste and appearance are spices, flavoring extracts, fruits, nuts and chocolate. *Butter* has been considered the only fat suitable to use in making cake, but with butter high in price many have used other fats and found them very good. Some of these are oleomargarine, corn oil, cottonseed oil and other vegetable fats.

Pastry flour is often used in cake-making and makes a tenderer cake than many bread flours. A bread flour made from soft wheat is better for use in cake than one made from hard wheat.

When too much *sugar* is used, it makes the cake more crumbly and the crust sticky and tough. Honey or syrup sometimes may be used in a cake in place of sugar.



CAKE-MIXER

Baking powder, soda, eggs and *air* are the leavening agents used in cakes.

Loaf and layer cakes are flour mixtures called *thick batters,* while cookies are called *stiff doughs.* A *batter* is a flour mixture that is stirred with a spoon. A *dough* is a mixture stiff enough to be kneaded and rolled.

Cakes and cookies should be kept in tight metal containers so that they will not dry out, and so that they will not absorb moisture from the air.

LABORATORY EXERCISES

CAKE-MAKING

Cakes made with fat: The following method is generally used in making cakes with fat:

1. Measure all ingredients.
2. Grease the cake-pans.
3. Cream the fat by rubbing and beating with a wooden spoon.
4. Add sugar gradually, beating the mixture until it is of a creamy consistency.

5. Beat yolk of eggs until it is thick and lemon-colored. Add to butter and sugar.
6. Add the baking powder to part of the flour.
7. Add the rest of the flour and milk alternately to the egg and sugar mixture.
8. Add vanilla and baking powder.
9. Beat egg-whites very stiff and fold into mixture.
10. Half fill greased pans. Bake.
11. Fruit or nuts should be mixed with a little of the flour and added just before the egg-whites.

STANDARD CAKE

¼ c. butter	½ c. milk
1 c. sugar	1½ c. flour
2 eggs	2½ tsp. baking powder
½ tsp. vanilla	

This cake recipe may be varied by adding one cup chopped nuts; or 1 tablespoon spice; or two ounces melted chocolate; or one half cup currants.

Cakes made without fat. The following is the method used in making cakes without fat:

1. Sift flour and sugar several times before measuring.
2. Beat yolks of eggs until the mass is thick and lemon-colored.
3. Add sugar gradually, beating with Dover egg-beater.
4. Add lemon juice or other flavoring.
5. Beat egg-whites until very stiff.
6. Partially fold egg-white into sugar and egg mixture.
7. Remove egg-beater; use spatula, and fold in flour and salt very carefully.
8. Bake in a tube cake-pan, unbuttered.
9. Bake forty to sixty minutes in a slow oven.
10. Do not open oven door for first twenty minutes.

11. After removing cake from oven, invert pan on cake-rack, but do not remove cake until cold.

SPONGE CAKE

6 eggs	Grated rind of $\frac{1}{2}$ lemon
1 c. sugar	1 c. flour
1 tbsp. lemon juice	$\frac{1}{4}$ tsp. salt

BOILED FROSTING

1 c. sugar	$\frac{1}{2}$ c. water
1 tsp. flavoring	1 egg-white

Mix sugar with water and boil until it "spins a thread" (232° F. on the thermometer). Beat egg-white stiff; over this pour the syrup slowly, beating all the time until it first begins to stiffen. Add flavoring and spread over cooled cake.

REVIEW QUESTIONS

1. What is a "leavening agent"?
2. Name the leavening agents used in quick breads; in cakes; in yeast bread.
3. What leavening agent is used with sweet milk? with sour milk? with molasses?
4. Explain the action of baking powder in a flour mixture.
5. Explain the action of soda in a flour mixture.
6. What is the leavening agent used in sponge cake? Explain the action.
7. Into what two classes may cakes be divided? Give examples under each class.
8. Give the proportions of ingredients used in a standard cake.
9. How may this be varied?
10. Give the general rules for making a cake with butter; without butter.
11. Give directions and proportions for baking-powder biscuits.
12. What kind of flour may be used in cakes?
13. Define the terms "dough" and "batter."
14. When and how should cake be eaten?
15. Why are cookies best for little children?

THE SCHOOL LUNCH

Many children must carry their lunch to school unless the school has a lunch-room where lunch may be purchased. It is very important that the lunch be of the right kind for the child, that it be packed in a way to keep it in good condition, and that it be eaten in an orderly way at the school.

First let us consider what foods are good to use in the school lunch. *Sandwiches* are important and should be made from well made, thinly sliced bread, with butter or with a good filling. Eggs, meat, dates, figs, peanut butter, lettuce, nuts and cheese are some of the foods that are good for fillings, and there are many ways of combining them.

Milk is excellent to include in any lunch, and when one wishes to vary the taste it may be combined with other materials and made into custards, blanc mange, cocoa, or soups. Soups or cocoa can be carried to school in a thermos bottle, and something hot on a cold day is very good.

Rice may be prepared in many ways for the school lunch. *Cookies*, simple *little cakes*, or *sweet crackers* are always good. *Fruit*, raw or cooked, should be used often.

Tin buckets or tin boxes keep the lunch in the best condition. *Lunch-boxes* with a thermos bottle slipped in the top may be purchased, but they are expensive.

Pasteboard boxes are not good because they cannot be thoroughly cleaned. Newspapers should not be used for wrapping lunches; if paper must be used, choose clean wrapping-paper.

Oiled or *waxed paper* should be used for separately

wrapping sandwiches, cakes and other foods to go in the lunch. This paper can be purchased at little cost and keeps the food in better condition. *Covered glasses* should be used for custards and similar foods. *Paper napkins,* to be used as a cover for the desk or table, and for wiping the fingers, should be in every lunch. Each child should have a *drinking-cup* and whatever silver is needed for eating the lunch. In

LUNCH-BOX

With a thermos bottle, oiled paper, drinking-cup, paper napkins and covered glass.

packing the lunch, place the articles in the box in such a manner that they will jar as little as possible.

In some schools the girls in the cooking class prepare a hot dish for luncheon at noon; in other places the mothers send from home a hot soup, cocoa, or stew in a fireless cooker.

Before eating the lunch, the hands and face should be washed. Every child should have his or her own soap and towel to use. The lunch should be *eaten*

slowly, either at the desk or at the table provided for that purpose, and the very best table manners should be practiced. After finishing the lunch, pupils should put the room in good order.

LABORATORY EXERCISES

THE SCHOOL LUNCH

SANDWICHES

Breads good to use for sandwiches are white yeast bread, whole wheat bread, brown bread, nut bread and raisin bread. The butter used should be creamed by stirring and beating with a spoon until it is creamy instead of solid. A spatula is best to use for spreading butter on the bread. The slices of bread coming together in the loaf should be put together in the sandwich so that they "fit."

Sandwiches for the lunch may be varied in three ways:

(1) by using different kinds of bread,

(2) by using different kinds of filling,

(3) by cutting the bread into different shapes.

The following are some good sandwich fillings. Perhaps some of the members of the class can suggest others.

1. Date paste, made of chopped dates and a little water, cooked together until a paste is formed. Lemon juice and chopped nuts may be added.
2. Jelly, jam, or marmalade.
3. Cottage cheese with pimento or nuts.
4. Lettuce with salad dressing.
5. Hard-cooked eggs, put through vegetable-ricer and seasoned. Minced ham or salad dressing may be added.
6. "Left-over" meat, chopped and seasoned, or mixed with salad dressing.
7. Cooked dried beans, put through a colander and mixed with cream, or salad dressing and chopped pickle.
8. Pea pulp with grated cheese and nuts.

NUT BREAD

1 c. brown flour	½ c. chopped nut meats
1 c. white flour	2 tsp. baking powder
1 c. sweet milk	½ tsp. salt
½ c. sugar	½ egg

Mix a little of the flour with the nuts; mix a little with the baking powder. Beat the egg, add the sugar and salt. Add the sweet milk and flour alternately; then the

BUSY COOKS IN A RURAL SCHOOL
Perhaps they are preparing the noon lunch.

nuts and baking powder. Pour into greased bread-pan. Let rise twenty minutes. Bake one hour in a moderate oven.

DATE CAKES

1 lb. dates	2½ c. rolled oats
1 c. brown sugar	2½ c. flour
1 c. water	1 c. granulated sugar
1 c. fat	¼ tsp. salt

Wash, seed and chop dates; add brown sugar and one half the water; cook until a paste is formed. Cream fat and granulated sugar together. Add the salt. Add remainder of water, flour and rolled oats, alternately. Place a little of the mixture on the bread-board, roll very thin. Over the top of half the dough spread some of the date paste; fold the other half of the dough over this; press together gently. Cut with sharp knife into rectangular pieces, any size desired. Place on baking-sheets and bake in a moderate oven twenty to thirty minutes. Never try to roll more than a small portion of the dough at a time, because it is difficult to fold over a large amount.

BAKED CUSTARD

1 pt. milk	2 eggs
2 tbsp. sugar	½ tsp. vanilla
⅛ tsp. salt	

Scald the milk, sugar and salt together. Beat the eggs slightly, pour the scalded milk over them gradually; add vanilla, stir well. Pour into cups or ramekins. Set in pan of warm water; bake in a moderate oven until a knife thrust through the middle of the custard will come out clean.

Directions. Obtain several good containers and other equipment necessary for packing lunches. Divide the class into groups, and have each group prepare foods suitable to use in the school lunch.

Pack the following lunches:

(1) Nut bread and butter sandwiches (two)
Lettuce sandwich
One orange
Date cookies (two)

(2) Milk
Egg sandwiches (two)
Jelly sandwich
Baked apple

(3) Bread and butter sandwiches (two), cut in triangular shape
Nut bread and butter sandwich
Custard
Dates, raisins, or figs

Plan some lunches in which cocoa, or soup, or meat stew is served at school and the rest of the lunch is brought in the lunch-box.

REVIEW QUESTIONS

1. What kind of lunch-boxes should be used? Why?
2. Name the other equipment needed for packing a lunch well.
3. What is the price of oiled paper? Where can it be obtained in this locality?
4. How should the school lunch be served?
5. What rules should be followed when eating the lunch?
6. How should good sandwiches be made?
7. Should the daughter in the house help prepare the lunch for school?
8. What foods should be prepared in sufficient quantity for several lunches, to be used on different days?

LABORATORY EXERCISES

SERVE A LUNCHEON OR SUPPER

Suggested Menu: Cheese strata
Lettuce sandwiches
Dried peaches
Sponge cake

Estimate the cost of the meal.

Serve several luncheons or suppers, if there is time in the course.

If possible, serve a buffet supper, inviting the mothers as guests.

THE DINNER PLAN

Dinner, in most homes, is the "heaviest" meal served during the day because it consists usually of a greater variety of food than do the other two.

The *home dinner* may be planned in one of three ways: (1) Meat, with one or two vegetables; bread and butter with jam, jelly, or preserves; dessert. (2) Meat, with one or two vegetables; salad; bread and butter with jam, jelly, or preserves; dessert. (3) Soup; meat, with one or two vegetables; bread and butter with jam, jelly, or preserves; salad; dessert. A very simple meal is a *one-dish* meal; that is, a combination dish, consisting of both meat and vegetables, served with bread and butter, and perhaps a sweet or dessert of some kind.

The plan which is best to use for dinner depends upon several things: (1) what kind of meals have already been eaten during the day, (2) what amount of money can be spent for food and (3) what amount of time should be spent in getting the meal.

When meals are planned, they should be arranged for the whole day at least. If a very light breakfast and a simple luncheon or supper are to be served, it is necessary to have a heavier dinner than when a good deal of heavy food (food containing much food value) is served for breakfast, luncheon, or supper. Then, too, the kinds of food served in any one meal must be considered when the others are planned, because variety is necessary in the diet. Foods used often should be varied by preparing them in different ways; for example, potatoes should not be served

mashed every day for dinner, but should be served in other ways on different days.

It is not necessary to have soup at the beginning of a dinner, nor is it necessary always to have a *dessert* at the end. The housewife should not serve a heavy dessert, such as a pie or rich pudding, at the end of a meal in which a meat, vegetables and a salad have been served. It is better to serve a dessert of fruit, or plain gelatine pudding, at the end of such a meal.

Too many *vegetables* should not be served at dinner; the general rule of serving two is a good one to follow. Lettuce is usually served with any salad and would make the third. In choosing the two, it is better to select one starchy and one green vegetable, the two being pleasing in taste when eaten together. When a vegetable salad is served, it can take the place of one of the cooked vegetables.

Only one kind of *meat* should be served. A meat or fish salad should not be served when another meat dish is being used. Eggs are not needed when meat is served, nor should meat be served with baked beans.

The same vegetable should not be served twice in the same meal; for example, do not serve potatoes in a hot dish and also in a salad, nor rice as a vegetable and in a rice pudding, nor tomato salad and tomato sauce for the meat. Do not serve more than one kind of "sweet" at a meal.

When a housekeeper must do everything herself, without help, she should consider the length of *time* needed in the preparation of a meal. Some dishes require a much longer time in their preparation than it is right for the housekeeper to spend when there

are others more easily prepared that are quite as good. No person should spend too large a share of her time in cooking, as there are other things as important to be done. It is necessary to prepare enough food and to have it well cooked, but "fancy" cookery takes too much time when the housekeeper does all of the household work in her home.

It is wise to think about the amount of *fuel* used in getting a meal if other than a coal or wood range is used. Sometimes it is economical to plan a meal with all the main dishes baked in the oven, or cooked in the steam cooker, or in the fireless cooker, instead of cooking one dish in the oven and one or two on top of the stove.

DEEP-FAT KETTLE, WITH FRYING-BASKET

To plan, cook and serve a good dinner is a difficult piece of work, and any girl deserves praise when she can do this at home without her mother's help.

LABORATORY EXERCISES

LEFT-OVER DISHES

Experiments: 1. Place the kettle of fat over the fire and heat until it begins to " foam " on the surface. Place a cube of bread in the fat. After one minute remove the bread; break it apart. Has the bread absorbed the fat?

2. Continue heating the fat until blue smoke rises from the surface. Place another cube of bread in the fat. After one minute remove the bread; break it apart. Has the fat been absorbed as in the bread used in No. 1? Which temperature would be best to use in frying croquettes? Can you explain why? Would you want the fat as hot for frying doughnuts? Why?

CROQUETTES

Croquettes may be made of left-over meat, vegetables, or cereals, alone or combined, and may be mixed with thick gravies, No. 4 White Sauce, or egg. The croquettes

No. 2, Croquettes. No. 3, Meat Loaf. No. 5, Pea Sandwiches

should be mixed, the hot sauce added, and then allowed to cool. Be careful to add only enough sauce or eggs to bind together the ingredients.

When the mixture is cold, form the croquettes into the desired shape, either ball, pyramid, or roll. Beat an egg slightly, add two tablespoons of water, and mix thoroughly. Use bread crumbs that are very fine. Roll the croquette in the egg, then in the crumbs, then in egg, and then in crumbs. Place croquettes in frying-basket and lower the basket carefully into the hot fat. Fry until brown. Remove croquettes and place on crumpled brown paper to

drain. Be careful not to pierce or break the crust on the croquette, either while it is in the fat or when removing it from the fat.

The following are some combinations used in croquettes:

SALMON CROQUETTES

$\frac{1}{3}$ c. No. 4 White Sauce
$\frac{2}{3}$ c. canned salmon, flaked
Lemon juice, paprika and salt to taste

POTATO CROQUETTES

1 pt. mashed potatoes
2 tbsp. butter
$\frac{1}{4}$ tsp. salt
1 tsp. chopped parsley
1 egg yolk or $\frac{1}{2}$ egg
Onion juice if desired

BEEF AND RICE CROQUETTES

1 c. finely chopped beef
$\frac{1}{3}$ c. cooked rice
$\frac{1}{8}$ tsp. pepper
Tomato sauce or left-over gravy

SCALLOPED HAM AND EGGS

2 hard-cooked eggs
$\frac{1}{4}$ c. chopped ham
1 c. No. 2 White Sauce
Buttered bread crumbs

In the bottom of a buttered baking-dish, or ramekin, place a layer of crumbs, then a layer of white sauce, then a layer of the eggs sliced, then white sauce, then ham, then crumbs; continue until the dish is filled. Finish with a layer of crumbs. Bake in a moderate oven until crumbs are browned and ingredients thoroughly heated through.

REVIEW QUESTIONS

1. What is the material used for binding together the ingredients in each of the croquette recipes?
2. What would be the result if too much white sauce were added to the croquette mixture?
3. What are other recipes for using left-overs?
4. Give three general plans for dinner.
5. What points must be considered when planning a dinner?

6. Should meals be planned singly or for the day? Why?
7. Give the general rules to follow in planning the vegetables for dinner.
8. What are some reasons for not serving more than one meat for dinner?
9. What should not be served at a dinner where meat is used?
10. Should the same food be served twice in one meal? Give examples.
11. In what way may fuel be saved in getting a dinner?
12. Plan some dinners that would be economical as to price and time, and that would be pleasing in taste and appearance.

VEGETABLES

The term *vegetable* includes a large class of foods which are used in great quantities in our diet. Vegetables of many kinds can now be had at all seasons of the year because the canned and dried vegetables, like the fresh ones, can be shipped successfully from one part of the country to another. In large city markets a great variety of fresh vegetables can be bought, even in midwinter. Hothouse and imported vegetables are expensive and in many cases not of good flavor. *Lettuce* is now used by many households at all seasons of the year; it is usually good when carefully selected, and it satisfies the desire for something green during the winter.

Vegetables are important in the diet because they furnish a large share of the mineral matter needed by the body. They supply carbohydrates, in the form of starch and sugar, and also supply bulk in the diet.

There are several *classifications* given for vegetables; perhaps the best one to use is that which divides them into green and starchy vegetables.

The *green vegetables* are sometimes called watery or succulent vegetables. They contain very little starch, but are valuable as food for their mineral matter, and for the cellulose and the vitamines they supply. They are useful because they furnish variety in our meals. Such vegetables as lettuce, cabbage, Brussels sprouts, celery, cucumbers, radishes, onions and tomatoes are green vegetables.

Green vegetables are of two kinds, (1) those with a mild flavor, such as celery and squash, and (2) those with a strong flavor, such as cabbage and onions.

All vegetables lose food value when boiled in a large quantity of water, because mineral matter and other soluble materials are dissolved out of them.

Steaming is a better way of cooking vegetables, if all the food value is to be retained. Mild-flavored vegetables taste well when steamed, or when boiled in just enough water to keep them from burning. The strong-flavored vegetables are of better flavor when cooked in a quantity of water, and this method is most common, even though the food value is lessened.

The *starchy vegetables* are such vegetables as potatoes, corn, sweet potatoes and parsnips; also the legumes which have already been studied.

Baking is an excellent method for cooking vegetables which taste well when prepared in that way. Boiling vegetables, such as the potato, with the skin on, prevents the loss of food value.

Vegetables are *cooked* for several reasons: (1) to soften the cellulose, (2) to change or improve the flavor, (3) to make the starch easier to digest, (4) to vary the way of serving them.

Vegetables are often cooked for too long a time.

This spoils the flavor and perhaps the appearance, in addition to causing a loss of food value. They should be cooked until tender and not allowed to stand after they are done. Cabbage is a vegetable usually cooked for too long a period, in which case it becomes strong in flavor, tough and very different in appearance.

When vegetables are *purchased*, the fresh crisp ones should be selected. Withered vegetables are not good in flavor and are often poor in texture. Many vegetables, such as corn, green peas and string beans, retain their good flavor but a very short time after being gathered. If withered vegetables must be used, they may be improved by long soaking in cold water before cooking.

When selecting vegetables, the following points will be helpful:

Green beans should be crisp, and the pod should snap easily.

Green peas should have a green pod, the seed tender when pressed with the finger nail, and the pods well filled.

Green corn should have a fresh green husk, brown silk, the ears well filled, and the grain tender and full of juice when pressed with the finger nail.

Young carrots or fresh beets should be firm and have tops that are green and fresh.

A head of lettuce should be solid when pressed, and not have a number of outer leaves that must be thrown away. Leaf lettuce should be fresh and of a light green color, without old and coarse leaves.

Celery should be crisp, tops not wilted, and outer stalks neither woody nor brown in color.

A head of cabbage should be solid and with few leaves that cannot be used.

Radishes should be firm, tops not wilted.

Tomatoes should be thoroughly ripe, smooth and without spots that, when removed, will spoil the shape of the tomato.

Many vegetables are now sold by the pound, and it is economy to buy those which will require little waste in preparation.

HOME PROBLEMS AND QUESTIONS

Make a list of all the vegetables you know.

Divide the list into the following groups:

1. Those that may be baked.
2. Those that may be creamed.
3. Those that may be scalloped.

Can any of the vegetables be put in more than one class?

Make a list of the green vegetables, and one of the starchy vegetables commonly used. Use Bulletin No. 28, "The Composition of American Food Materials", obtained from Bureau of Chemistry, Department of Agriculture, Washington, D. C., to find to which class they belong.

What is the price by the pound of the following: onions, carrots, turnips, parsnips, potatoes, sweet potatoes?

What is the price by the can of peas, tomatoes and corn? Does the price vary with the different brands? Can you give reasons why this might be? Read the label on a can of vegetables. What is stated on the label? Why should one read the label?

Bring to class one or two good recipes for preparing vegetables which have not been used in class. Let every member of the class copy the recipes in the class notebook if they are approved.

LABORATORY EXERCISES

VEGETABLES

BAKED SQUASH

Wash the outside of a Hubbard squash. Cut into pieces about three inches square, or into any shape desired. Remove the seeds. Sprinkle the inside of each piece with a little salt, pepper and sugar. Place on shallow pan and bake in oven until squash is tender and slightly browned on top.

SCALLOPED CORN

1 can corn	1 tbsp. butter
1 pt. milk	2 eggs
½ tsp. salt	1 tbsp. sugar
⅛ tsp. pepper	Buttered bread crumbs

Chopped green peppers, if desired

Beat the eggs slightly, add milk, sugar, salt and pepper: mix thoroughly. Add the corn. Pour the mixture into a buttered baking-dish, add the butter and cover top with bread crumbs. Set in a pan of water. Bake about forty-five minutes in a moderate oven.

Would less time be required if this were baked in ramekins? Why?

CARROTS AND PEAS

Wash and scrape a carrot. Cut into dice, place in boiling salted water; boil gently until the carrot is easily pierced with a fork. Do not cover the saucepan, and use as little water as possible. When the carrot is done, drain it from the water; add it to an equal quantity of drained canned or fresh peas which are hot. Pour

melted butter over them; sprinkle with pepper. Serve in a warm vegetable-dish.

Instead of serving them in this manner, after combining the two vegetables, add half as much of No. 2 White Sauce as there is of vegetables. Re-heat and serve in bread boxes. *Bread boxes* are made by taking a piece of bread about three inches square and two inches high and hollowing it out to make a box. Then butter outside of box, place on pan, and toast in oven. Use while warm.

These bread boxes are used simply to vary the manner of serving a food. Creamed oysters, creamed meats and other creamed vegetables are also served in bread boxes.

How may the bread which you removed from the center of the box be used?

CREAMED ONIONS

Peel an onion, wash and place in boiling salted water to cook. Do not cover pan. The onion is done when it can be pierced easily with a fork. Drain onion and add No. 2 White Sauce. Re-heat. Serve in a warmed dish.

THE POTATO

Potatoes are used as food in greater amount than any other vegetable. If all the potatoes grown, minus those used in other ways than human food, were equally divided among the people of the world, it would give every person about four bushels a year.

The potato is a native of America and probably was first found in Chile. It was first grown in Europe in or about 1585. In Ireland the potato is one of the chief foods of the people, and for that reason the white potato is called the *Irish potato.*

The botanist calls the potato a tuber, that is, an underground stem which has thickened and become a storehouse for food to be used by the new plants.

When the chemist examines the potato, he finds that it *contains* a large amount of starch, a little protein, some mineral matter and a large per cent of water. The potato is particularly valuable for its starch, and is therefore mainly a heat and energy-producing food.

The method used in *cooking* potatoes has much to do with the food value. Baking or boiling "in their jackets" saves the food value. Peeling and then boiling causes some loss of the mineral matter and protein, since these foodstuffs are found just under the skin of the potato and may be lost when it is pared, unless very thin peelings are removed.

Potatoes, to be cooked, should be put in boiling water, not in cold, as soaking peeled potatoes in cold water draws out the starch and also causes a loss of protein and mineral matter. Potatoes should never soak in cold water after they are peeled, if all of the food value is to be saved. If they are old and withered, they should be freshened by soaking before the skin is removed. Potatoes should be removed from the boiling water as soon as they are done. *Baked* potatoes, when done, should have the skin broken or pierced with a fork to allow the escape of the steam, which would cause the potato to be soggy.

New potatoes are those sold immediately after they are harvested. *Old potatoes* are those that have been stored before being put on the market. In the spring old potatoes may *sprout*, which indicates that a new plant is beginning to grow from the "eye" of the potato. This hurts the quality of the potato for cooking. Potatoes that have been *frozen* are sweet, poor in flavor, and not mealy.

When *buying* potatoes, choose those of fairly uniform size, having smooth skins and free from scab. Potatoes are sold by the measure or by weight, the latter custom being much more common than formerly.

Sweet potatoes are very much like Irish potatoes in food value, except that they contain sugar which gives them their sweet taste. Sweet potatoes are grown and used more in the South than in the Northern States.

LABORATORY EXERCISES

POTATOES

BAKED STUFFED POTATOES

Scrub with a brush, in cold water, a medium-sized, well shaped potato. Cut off a strip of peel one half inch wide around the middle of the potato. Place the potato on a rack in a hot oven. A medium-sized potato needs to bake about forty-five minutes. Test by piercing with a fork or pressing firmly between the fingers; it should feel soft if done.

Cut the potato into halves at the peeled strip, remove the inside carefully from the shells, mash, add salt, butter and cream, or milk, using about one teaspoon butter and one tablespoon milk for each potato. Beat well. Refill the shell with the mashed potato; do not press down, but fill lightly. Place on pan and set in a hot oven to brown the top slightly.

CANDIED SWEET POTATO

Scrub sweet potatoes and place in boiling water, cook until partly done, peel and place in a shallow baking-dish. Make a syrup by boiling together equal parts of sugar and water; pour this over the potatoes, sprinkle with salt and bits of butter. Bake in a hot oven until the potatoes are done and slightly brown.

FRENCH FRIED POTATOES

Wash and peel small potatoes, cut in eighths lengthwise; soak thirty minutes in cold water to make very crisp. Take from water and dry between towels. Fry in a frying-basket in deep fat. Drain on brown paper and sprinkle with salt.

Test the fat with a small cube of bread. If bread browns in one minute, the fat is the right temperature for frying potatoes.

Should the fat be as hot as when frying the croquettes made in a previous lesson? Why?

REVIEW QUESTIONS

1. Why are vegetables important in the diet?
2. Into what two groups may vegetables be divided? Name examples of each.
3. How should highly flavored vegetables be cooked?
4. Why are vegetables cooked?
5. How should mild-flavored vegetables be cooked?
6. Give the points to be observed in selecting the following: head lettuce, leaf lettuce, celery, cabbage, tomatoes, green corn and green peas.
7. What foodstuffs are found in a potato?
8. Should peeled potatoes be soaked? Why?
9. In cooking potatoes which are the best methods to use? Why?
10. How may baked potatoes be kept from becoming soggy?
11. What are "new potatoes"? "old potatoes"?
12. How do sweet potatoes differ from Irish potatoes?
13. Is "French fried" an economical way of preparing potatoes? Why?

OTHER STARCHY FOODS

RICE

Rice is a food sometimes used in a meal in place of potatoes. Rice and potatoes should not be used

in the same meal because both are starchy foods, of like appearance, and without much flavor. If a rice pudding is to be served as dessert, then green vegetables are best to use in the main course of the meal.

Most of the rice used in the United States comes from the Southern States, where the growing of rice is becoming a much more important industry than formerly.

Rice is sold in the market in two forms, (1) *polished,* and (2) *unpolished or brown rice.* In preparing rice for the market, the outer husk of the seed is removed. The rice then appears brownish in color and is called brown or unpolished rice. To remove this brown coating, the grains are polished. It is then sold as "polished rice" and is white in color. The brownish coating on the rice contains mineral matter and vitamines. When it is removed valuable food material is lost. The brown rice has a good flavor but does not sell so well as the polished rice because of its appearance. It is cheaper than the polished rice. When buying the "best" rice, one should see that the grains are uniform in size and unbroken.

MACARONI, SPAGHETTI, VERMICELLI

Macaroni is a product made by mixing flour with water to form a stiff dough which is then forced through metallic plates that have small round perforations with the center of the hole filled, thus making long hollow tubes of dough. When the dough tubes have been dried in ovens they are packed for market. Macaroni is sold in packages that contain pieces cut the length of the package,

packed closely side by side, or pieces cut about two or three inches long.

Spaghetti is another form in which this paste is sold, but for this the tubes are made smaller than for macaroni. Vermicelli is still another form of this paste, sometimes rolled and cut in fancy shapes, such as the alphabet.

Macaroni and spaghetti are served as a substitute for starchy vegetables, and when either is used, such foods as potatoes, rice, corn, or beans should be omitted from the meal. Vermicelli is used in soups.

Any of these products need highly seasoned foods, such as tomatoes or cheese, either cooked or served with them. To taste best, they require fat added.

HOMINY

Hominy is a product made from corn by removing the hard outside layers of the kernel. It may be sold in this form, or the grains may be broken into small pieces, when it is called *grits*, — or the pieces may be steamed and rolled, when it is known as *flaked hominy*. Hominy is a starchy food often used in a meal in place of potatoes, and is very good when well cooked.

CORNSTARCH

Cornstarch is also a product made from corn, and is used as a thickening agent. It is a fine white powder and is sold in packages.

TAPIOCA

Tapioca is a product made from the root of the cassava plant which grows in South America. It

is almost pure starch, and is prepared from the root by grating, washing and separating the starch, after which it is dried on metal plates. Tapioca is sold in two forms, (1) *pearl tapioca*, which is usually soaked several hours before cooking, and (2) granulated or *minute tapioca*, which need not be soaked. Tapioca is used mainly in making puddings.

LABORATORY EXERCISES

STARCHY FOODS

Experiments: 1. Starch turns to a blue color whenever tincture of iodine is added to it. Place a drop of iodine on each of the following: a slice of potato, rice, tapioca, cream of wheat, flour, sugar, egg, meat. Which contains starch?

2. Place one half teaspoon of cornstarch in two tablespoons of cold water in a glass or test tube. Mix together well. Has the liquid changed in appearance? Let this stand for fifteen minutes. What has happened? Is the starch dissolved in the cold water?

3. Try the same experiment, using sugar instead of starch. Is the result the same? Why?

4. Pour one half cup boiling water directly on one tablespoon cornstarch, stir, boil one minute. Is the mixture smooth? Examine the inside of a lump. Is it like the uncooked starch?

5. Mix one half teaspoon cornstarch with two tablespoons cold water. Heat slowly, boil one minute. Is the mixture smooth? Can you explain why?

6. Try the same experiment, mixing the cornstarch with an equal amount of sugar, then add boiling water. What is the result?

7. Try mixing one tablespoon cornstarch with one half teaspoon fat and stirring into boiling water. What is the result?

The results would have been the same if you had used flour instead of cornstarch. The starch grains must be thoroughly separated before cooking, so that each starch grain may cook thoroughly. From these experiments determine the best method for making blanc mange.

BLANC MANGE

2 c. milk	2 tsp. vanilla
¼ c. cornstarch	⅛ tsp. salt
¼ c. sugar	Nutmeg

The pudding should be cooked thirty minutes in a double-boiler. Pour into a mold that has been wet with cold water. When cold and "set", remove from mold and serve with fruit juice, or maple syrup, or cream.

MACARONI AND CHEESE

Break macaroni into short pieces. Rinse and add to boiling salted water. Use about one fourth cup of macaroni with one pint of boiling water and one half teaspoon salt. Boil gently until macaroni is tender. Drain off water, pour cold water over macaroni and drain at once; this prevents the pieces sticking together.

In the bottom of a buttered baking-dish place a layer of well seasoned No. 2 White Sauce made with milk, then a layer of macaroni, then a layer of grated cheese, then one of white sauce, — continuing until the dish is almost filled. Place a layer of buttered bread crumbs on top. Bake slowly thirty to forty minutes.

RICE AS A VEGETABLE

3 c. water	1 c. rice	1 tsp. salt

Place rice in wire strainer and wash by running water through the rice. Place water in top part of a double-boiler over direct heat and bring to boiling-point; add the rice and salt. Place over boiling water and cook until the rice is tender. Serve.

Rice may be cooked in a steamer if desired. It is also cooked in boiling water over direct heat, using eight cups of water to one cup of rice. Why is more water needed? Which method would be best to use when all the food value is to be retained?

REVIEW QUESTIONS

1. What do you know about the growing of rice?
2. In what forms is rice sold? Which has the most food value? Which is better in appearance?
3. What is the price of polished rice per pound? of unpolished rice?
4. How is macaroni made? What nation eats a great deal of macaroni?
5. What is spaghetti? vermicelli?
6. How is hominy made?
7. What are hominy grits? hominy flakes?
8. What food may hominy replace in a meal?
9. In what kind of package is cornstarch usually sold? What is the price?
10. What is tapioca?
11. In what two forms may tapioca be purchased?
12. Which is the easier to use?

MEAT

The flesh of animals is called meat. The principal kinds used in the United States are beef, veal, mutton, lamb and pork.

The slaughtering and packing of meat is one of the most important industries in the United States and is one that is governed by many federal and State laws. These are necessary, because meat used as food must be clean and free from harmful bacteria, as well as from parasites, which are tiny living creatures in the flesh of unhealthy animals.

Clean meat is that from animals free from disease,

slaughtered under sanitary conditions, and kept in a cold place away from flies, dust and other dirt until sold to the housekeeper. The large packing firms have their plants well equipped to carry on this work according to law. Some of the small slaughterhouses used by butchers are not clean and are not good places for handling meat.

The meat market or shop must be kept clean, and the men handling the meat must wear clean clothes and have clean hands if the meat is to be kept in good condition. As soon as fresh meat comes from the market the paper wrapping should be removed and the meat put in a cool place, away from flies and dust.

In order to thoroughly understand what cooking does to meat, one must understand its *structure*. Meat is composed of muscle fibers held together by connective tissue. Each fiber is composed of bundles of tiny tubes filled with muscle juice composed of water in which are protein, mineral matter, coloring matter and extractives. The extractives give the flavor to meat. In between the muscles, and surrounding the tubes, are the particles or globules of fat.

When meat is *cooked* the connective tissue is softened, the flavor is improved and changes take place in the muscle juice. Meat is either tender or tough, depending upon the age of the animal and the part of the carcass from which it comes. The *tough portions* come from the much exercised sections of the animal's body. The tough cuts usually have more flavor, contain as much food value, and when well cooked are as pleasant to the taste as the *tender cuts*. The tough cuts cost less than the

tender because there are fewer tender cuts in the animal carcass.

Tender cuts of meat can be cooked successfully in dry heat by (1) broiling, (2) pan-broiling and (3) roasting. The tough cuts are best when cooked in moist heat by (1) stewing, (2) braising and (3) pot-roasting.

When selecting meat at the market it is important to know the names of the several cuts and also the part of the animal carcass from which the cuts are taken, in order to decide which method is best to use in cooking them.

LABORATORY EXERCISES

MEATS — TENDER CUTS

Experiments: 1. Take a small piece of tough lean meat and scrape with the dull edge of the knife, scraping both sides until nothing remains but the stringy mass or framework of the meat. Of what is this framework made?

2. Place the stringy mass in a frying-pan and heat for a few minutes. What is the result?

3. Pour a little water in the frying-pan, cover pan and simmer slowly for twenty minutes. What effect has the moist heat had on the stringy mass?

What would be the best methods to use in cooking tough meats? Why?

4. Place one cube of meat in a small amount of cold water and let boil three minutes. Place another cube of meat in a small amount of boiling water and boil three minutes. Examine the liquid on both. Do they differ? Why? Which method would you use for making soup? Which when the meat itself is to be used? Why?

PAN-BROILED STEAK

Wipe steak with a damp cloth. Have frying-pan very hot. Rub a little fat over the bottom of the frying-pan. Place the steak in the frying-pan, sear on one side, then on the other; turn very often and cook until done according to taste. Place on warmed platter, sprinkle with salt and pepper, and with bits of butter if desired.

A steak for broiling should be at least one inch thick. To cook a steak of this thickness to a medium degree requires about fifteen minutes.

Lamb chops, mutton chops, or pork chops may be broiled in the same way.

A broiler may be used instead of the frying-pan if there is one available.

ROAST OF BEEF

Wipe the roast with a damp cloth. Place in a roasting-pan in a very hot oven. Roast ten minutes, or until the meat is seared. Dredge the roast with salt, pepper and a little flour. Reduce heat in the oven and continue roasting until done according to taste; about fifteen or twenty minutes must be allowed for each pound to cook to a medium degree. A little water may be added which may be used for basting the meat. A large roast is always more juicy than a small one, — four or five pounds is as small a roast as should be used to obtain good results.

Meat may be roasted in the fireless cooker, if desired.

CASSEROLE OF BEEF

2 c. left-over cooked beef
1 c. gravy
$\frac{1}{4}$ c. celery cut in small pieces
$\frac{1}{4}$ c. carrot cut in small cubes
1 c. potato cubes
$\frac{1}{2}$ c. canned tomatoes
$\frac{1}{2}$ onion, thinly sliced
$\frac{1}{4}$ tsp. salt
$\frac{1}{16}$ tsp. pepper

Mix together and place in a casserole; cover. Bake slowly one hour. Serve from casserole.

REVIEW QUESTIONS

1. What are the principal kinds of meat used in the United States?
2. Why must meat be kept clean?
3. What is clean meat?
4. Describe the structure of meat.
5. What are the foodstuffs found in meat?
6. What is the chief value of meat as food?
7. What changes take place in meat when it is cooked?
8. What makes meat tough?
9. From what parts of the animal are the tough cuts obtained?
10. How may tender cuts be cooked? How should tough cuts be cooked?
11. Make a plan for dinner in which casserole of beef might be correctly served; roast beef; broiled steak.
12. What other meats might be used in place of the beef in the casserole of beef?

MEAT (*Continued*)

BEEF

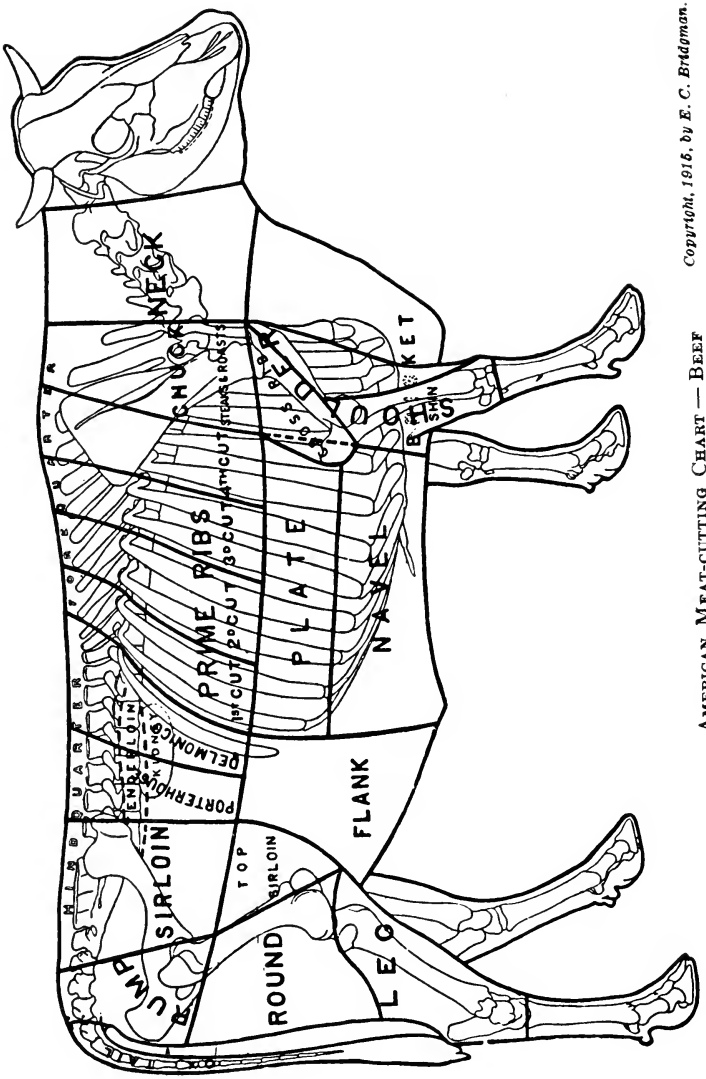
After beef is butchered, the carcass is first split lengthwise into two *sides* of beef, then each side is divided crosswise into the *fore quarter* and the *hind quarter*. The quarters are divided into the "*cuts*" or pieces as we buy them in the meat-shop. Different butchers make these cuts in slightly different ways, but in general they are the same.

By looking at the chart showing the cuts of beef one can learn to what section the various cuts belong.

The following are the usual *methods of cooking* the most common cuts:

Roasting: rib, loin, round, chuck.

Pot-roasting: chuck, rump.



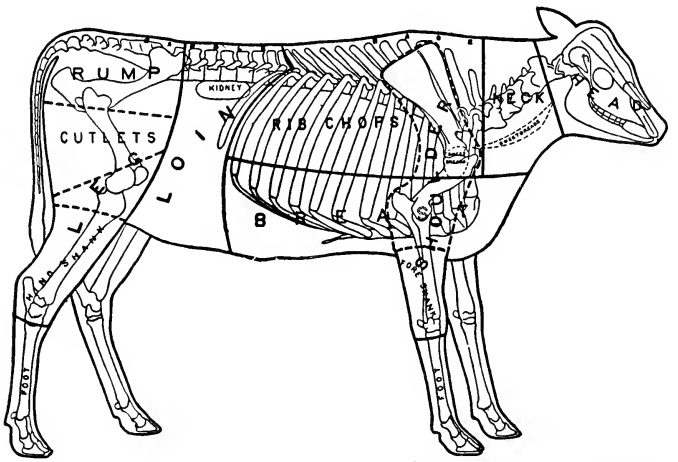
AMERICAN MEAT-CUTTING CHART — BEEF

Broiling: porterhouse, Delmonico or club steak, sirloin, T-bone steak.

Soup-making: neck, brisket, leg.

Braising: flank, chuck.

The fireless cooker is very useful in cooking tough meats, because they need long slow cooking if they are to be tender and juicy. Heat coagulates or "sets" the protein in the muscle tubes, and when



American Meat-cutting Chart — Veal

the meat is cooked at a high temperature the protein becomes tough, just as the egg-white does when an egg is boiled.

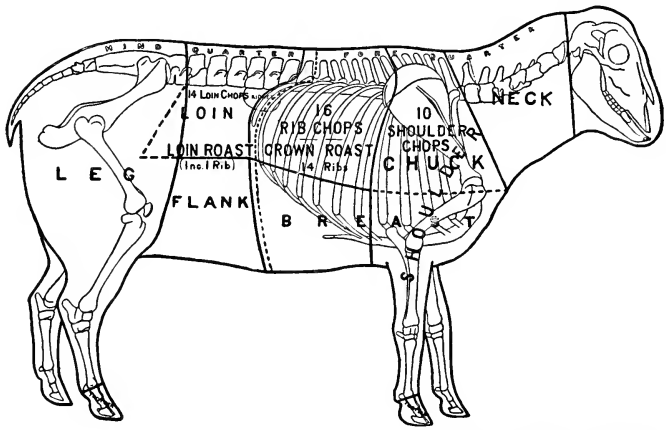
When meat is cooked, the object sought is to coagulate quickly the muscle juice in the ends of the tubes so that they are closed and no juice can escape; this process is called *searing*. Meat is seared, either by plunging it into boiling water, by placing it in a very hot oven, over hot coals, or in a

very hot frying-pan. After the meat is seared, the temperature should be lowered and the meat cooked slowly. When broiling meat, keep the fire very hot and turn the meat every two or three minutes, in order to keep the meat at the proper heat.

Veal is meat from a calf about two months old.

Mutton is meat from a sheep about two years old.

Lamb is meat from a sheep less than one year old.



American Meat-cutting Chart — Lamb

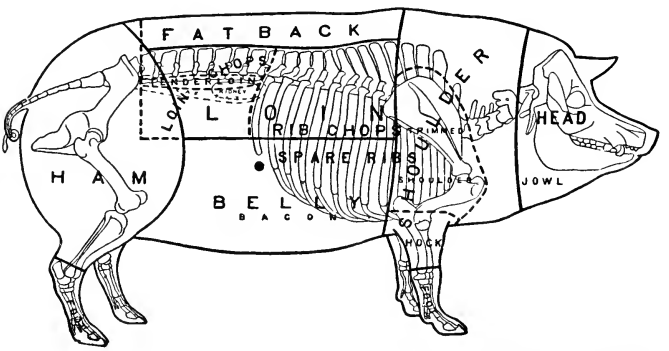
Spring Lamb is from a sheep eight weeks to three months old.

Pork is meat from the hog, and is used in great quantities. The cuts are shown on the chart. *Bacon* and *ham* are very generally used because they are both "cured" and can be shipped and easily kept.

Leaf lard is made from leaf fat (layers of pork fat), and is the best quality of lard.

Sausage is made of ground pork scraps, or trimmings; it is sold in bulk, or is stuffed in casings which are made of the treated skin of the intestines of the hog.

Meat contains such a large amount of protein that it is considered an important food for body-building. We do not need to eat as much meat as we usually do, because other foods can supply the



American Meat-cutting Chart — Pork

necessary protein. There is probably no person who needs meat three times a day. When meats are expensive, well balanced meals may be planned without the use of much meat.

HOME PROBLEMS AND QUESTIONS

What is the price per pound of the following: round steak, rump-beef roast, chuck-beef roast, porterhouse steak, a whole ham, slice of ham, side of bacon, sliced bacon, mutton chops, veal steak, rib-pork roast?

Is there a slaughterhouse in the neighborhood?

Where are the large packing plants from which the local butcher buys meat? What firms manage the largest packing plants in the world?

See if you can find the government inspection stamp on any of the meat which is used in your home. What does this indicate?

LABORATORY EXERCISES

MEATS — TOUGH CUTS

SWISS STEAK

Place on a meat-board a piece of steak one inch thick cut from the round. Wipe the meat with a damp cloth, and pound flour into it, using the dull edge of a heavy saucer or small plate to pound with. Pound on both sides thoroughly. The pounding breaks apart the muscle of the meat, and helps to make it tender.

Have a frying-pan hot; in this place some fat and when it is melted place the meat in the pan. Brown the meat on both sides, and sprinkle it with salt and pepper. Add boiling water to half cover the meat. Tomato juice may be used instead, if desired. Chop onion, green peppers and carrots, and place over and around the meat. Cover and place in slow oven or fireless cooker. Cook until the meat is tender.

POT ROAST

Use a piece of rump for this. Wipe the meat with a damp cloth, and brown it in hot fat in the frying-pan. Place in a kettle, add boiling water until the meat is half covered. Diced carrots, turnips, onions, or celery may be added if desired. Place in a fireless cooker, or simmer gently on the stove until the meat is tender. For gravy, the water in which the meat is cooked may be thickened or served as it is.

BEEF STEW

1 lb. beef (tough cut)	1 carrot
2 potatoes	½ onion
Flour	Salt and pepper

Cut beef in one-inch pieces, dredge with flour. Brown the onion, and then the meat, in hot fat in a frying-pan. If there is fat that can be removed from the meat, this may be used in the frying-pan. Add enough boiling water to nearly cover the meat. Cook until the meat is almost done, then add the diced vegetables and cook until the vegetables are done. The liquid may be thickened before serving, if desired. If the stew is placed in the fireless cooker the vegetables may be added at first, since it is not desirable to open the cooker before the meat is done.

REVIEW QUESTIONS

1. What is a "side of beef"? a "quarter of beef"? a "cut of beef"?
2. Name some cuts of meat coming from the fore quarter of beef; from the hind quarter.
3. What cuts of beef should be used for broiling? for pot-roasting? for roasting? for braising?
4. What is meant by "searing"? How is meat seared?
5. What is meant when the recipe says "dredge" the meat with flour?
6. What is veal? mutton? lamb? pork?
7. What is "leaf lard"?
8. How is sausage made?
9. Do we need to eat meat three times a day?
10. What foods can sometimes be substituted for meat in the diet?

LABORATORY EXERCISES

SERVE A DINNER

Suggested Menu: Broiled pork chops
Baked stuffed potatoes
Creamed onions
Baking-powder biscuit
Banana salad

Estimate the cost of the meal.
Discuss order of work.
What dishes will be used?

SOUPS

When meat, bone and gristle are boiled in water, the liquid that remains after the boiling is called *stock*. This is used in making soup.

When stock stands, it sometimes forms a jelly-like mass that is called *gelatine*. This gelatine is formed from the connective tissue which is present in the meat, bones and gristle, and which is soluble in hot water.

Commercial gelatine is usually sold in small packages. It is made from the skin, ligaments and bones of animals, and is largely used in making desserts and salads. Gelatine is a form of protein, and has some food value.

When meat is prepared for making soups, it is cut into small pieces and put into cold water to allow the juice to soak out of the muscle tubes as much as it will. The extractives are also drawn out of the meat by the water.

Meat stock alone contains very little food value, but by adding milk, vegetables, or bits of meat, we make it much more valuable as a food. Soups made from plain meat stock have a value, however, because the extractives cause the digestive juices to become more active, and it is for this purpose that clear soups are served at the beginning of a meal.

LABORATORY EXERCISES

SOUPS AND GELATINE

SOUP STOCK

Soup stock may be made from fresh meat, bone and gristle, or it may be made from trimmings and left-over meats. There may be several kinds of meat cooked together to make the stock. Some housekeepers keep a "soup-kettle" in which scraps of meat, bone and trimmings are placed. When there is enough in the kettle, water is added and the stock made. Meat scraps must not be kept too long, however.

Bouillon is the cleared stock made from beef. *Consommé* is the cleared stock made from two or three kinds of meat.

Soup stock is used, in combination with other liquids, in soups and gravies, or with vegetables in vegetable soup. If fresh meats are used in making stock, the meat itself should be used in some other way, because it contains about as much protein as fresh meat. It is tasteless, and must be well seasoned or used with highly flavored vegetables. This meat may be used in croquettes, hash, meat pies, and in casserole of vegetables and meat.

BEEF STOCK

2 lb. beef — 2 qt. cold water — 1 tsp. salt

Cut the meat into small pieces; crack the bone (let the butcher do this when you buy fresh meat); pour the water over this and let stand one hour. Simmer for three hours. Strain and let cool. For bouillon remove the fat from the top of the stock and strain the stock through cheesecloth; season with a bay leaf or cloves, pepper and salt, and re-heat. Sometimes egg-white is used for clearing bouillon, using white and shell. How could this be done?

VEGETABLE SOUP

2 qt. stock	1 carrot, diced
1 onion, sliced	1 turnip, diced
1 stalk of celery or dried celery leaves	Salt and pepper

Any left-over vegetables may be used. Barley, macaroni, or rice are sometimes added. Add the vegetables to the stock. Simmer gently until vegetables are heated through or cooked.

Experiments: 1. Examine various kinds of gelatine that can be purchased in the store. How do they differ? What is the price per ounce?

2. Place one fourth teaspoon of gelatine in one tablespoon cold water, let stand five minutes. What has happened? Add two tablespoons boiling water. Does the gelatine dissolve?

3. Add two tablespoons of boiling water to one fourth teaspoon gelatine. What happens? What method should be used in making gelatine dishes?

PERFECTION SALAD

$\frac{1}{2}$ c. sugar	2 tbsp. granulated gelatine
$\frac{1}{2}$ c. cold water	1 tsp. salt
$\frac{1}{2}$ c. vinegar	2 c. sliced celery
2 c. boiling water	1 c. shredded cabbage
Juice of one lemon	3 pimentos, chopped

Soak the gelatine in the cold water for a few minutes. Add the boiling water and sugar. Stir until all the gelatine and sugar are dissolved. Add lemon juice, vinegar and salt. Let cool until mixture begins to "set", then stir in vegetables. Wet the inside of individual molds with cold water. Pour in gelatine mixture. Keep in cold place until "set." Remove from mold, serve on lettuce with mayonnaise dressing.

LEMON JELLY

1 tbsp. granulated gelatine	$\frac{3}{4}$ c. sugar
$\frac{1}{4}$ c. cold water	$1\frac{1}{2}$ c. boiling water
$\frac{1}{4}$ c. lemon juice	$\frac{1}{8}$ tsp. salt

Follow directions for mixing given under Perfection Salad. Pour mixture at once into large mold. When it is cold and "set", remove from mold and garnish with whipped cream.

REVIEW QUESTIONS

1. What is "stock"?
2. Give directions for making "stock."
3. In what ways is meat stock used?
4. How is bouillon prepared?
5. Of what value in the diet are clear soups?
6. Why should the meat left from stock be used?
7. In what ways may this meat be used?
8. From what is commercial gelatine made?
9. Why should the vegetables not be added to the gelatine mixture until it begins to "set"?
10. Make a plan for a meal in which it would be proper to serve vegetable soup.
11. Make a dinner plan, using lemon jelly as the dessert.
12. Make a plan for a meal in which it would be correct to serve Perfection Salad.

POULTRY, GAME AND FISH

Poultry is the name given to domestic birds suitable for food, such as chicken, turkey, goose and duck. *Game* is the name given to wild birds and animals that are hunted for food, such as quail, partridges, wild ducks and geese. *Pigeons* and *squabs* are classed as game. In the United States game has become very scarce and is little used for food.

Chicken is used more than any other kind of poultry, and can be purchased in the market at any season of the year. A *spring chicken* is a chicken not more than four months old. A *broiler* is a young chicken that weighs about a pound, or a

pound and a half. In *selecting* chickens in the market, it is necessary to know how to tell the age. A young chicken will have smooth yellow legs, and the end of the breast bone will be soft and flexible, while an older bird has scaly legs and a firm breast bone. In a dressed bird, a large number of small pinfeathers indicates that it is young, while long hairs in place of pinfeathers show age in the bird.

The breast or *white meat* of chicken is especially tender because it is composed of short fibers with a small amount of connective tissue and very little fat. Because of the structure of the meat and its low percentage of fat, white meat is easily digested, and is therefore often used in invalid cookery.

Poultry and game are much like meat in food value, and when either is served it takes the place of meat in the meal.

FISH

The flesh of fish is not unlike the flesh of meat, and can be used as a meat substitute.

In some sections of this country fish can be obtained fresh, and is best when cooked soon after being caught. Fresh fish is more difficult to keep in good condition than meat, and is therefore not easily shipped. When fresh fish can be purchased, it should be used often to vary the diet. Many kinds of fish are canned, dried, salted or smoked, and in these forms are found in every local market; but fresh fish is not easily obtained inland, — in many cases because there is no demand for it.

Oysters are one form of shellfish used as food. The oyster is protected by a hard shell covering. This shell is usually removed before the oyster is

sold in the market. The name "Blue Point", and other special names, formerly indicated the locality where the oysters were grown, but this is no longer the case.

Oysters stand shipping well, and are sold in most localities during the winter months at least. While oysters have little food value, they are much liked for their flavor.

LABORATORY EXERCISES

POULTRY AND FISH

To dress a chicken: 1. Remove feathers by pulling them out, after plunging the fowl into boiling water and holding it there for a moment or two. Fowls are sometimes picked without scalding, if the work can be done immediately after they are killed.

2. Singe the plucked fowl by holding it in a flame of gas or burning paper, being sure that all parts are exposed during the process so that all hairs are removed.

3. Cut off the head, if it has not been removed. The neck may be removed by pushing back the skin and cutting it off.

4. Remove the feet by cutting and breaking the legs at the joints.

5. Make an incision one inch above the vent and crosswise between the legs. Draw out the intestines and other organs carefully, cutting away the vent. Remove from the mass the heart, liver and gizzard, being careful not to break the gall bladder which lies under the liver. Cut the gall bladder away carefully.

6. Remove the skin from around the gizzard; open the gizzard and remove the inner skin and contents.

7. Wash the liver, gizzard and heart, squeezing the latter to remove any blood. These organs are known as the "giblets."

8. The crop and windpipe may be removed at the neck. Do this without breaking the crop, or tearing the skin at the neck.

9. Remove all pinfeathers with a sharp-pointed, small knife. Remove the oil bag from the tail.

10. Wash the chicken well in cold water, both inside and out. Dry with a cloth. The fowl is now ready to be used for baking.

11. When a fowl is to be cut into pieces, as for stewing, it is usually convenient to remove the wings and legs before removing the intestines and other organs from the body.

Poultry should always be allowed to stand several hours after dressing before it is cooked.

STEWED CHICKEN

Place the pieces of chicken in a kettle and cover with boiling water; boil a few minutes; then add one tablespoon salt, and cook slowly until the meat is tender when pierced with a fork. Remove chicken to a warm platter and set in a warm place. Add milk to the liquid in which the chicken was cooked. Thicken with flour, and cook for five minutes. Pour over chicken and serve.

Dumplings may be served with the stewed chicken if desired. These are cooked by placing them on top of the pieces of chicken in the kettle, keeping the dough out of the water as far as possible. Cover the kettle tightly. Cook twenty minutes. Remove dumplings and chicken; thicken gravy and serve. Dumplings of this kind are made like baking-powder biscuits, except that the dough is not so stiff.

SCALLOPED OYSTERS

1 pt. oysters
3 c. bread crumbs *or*
2½ c. cracker crumbs
½ tsp. salt
4 tbsp. butter
Milk
¼ tsp. pepper

Look over the oysters carefully, removing any bits of shell or other refuse. Drain the liquor from the oysters by straining it through a wire sieve. Wash the oysters by dipping the sieve into water, or by allowing water from the faucet to run through them. Melt the butter in a frying-pan; add the crumbs, salt and pepper. Place a layer of crumbs in a buttered baking-dish, then a layer of oysters, then a layer of crumbs, until the dish is filled, finishing with a layer of crumbs on top. Add the liquor left from draining the oysters, and just enough milk to show on the top at the side of the dish. Bake in a moderate oven forty to fifty minutes.

FRIED OR SAUTÉED FISH

Clean the fish carefully, being sure that all the scales are removed. Split the fish on the under side, lengthwise, and clean the inside carefully. A large fish can then be cut into pieces of the desired length; a small fish need not be cut. Roll each piece in equal parts of corn meal and flour, or in egg and bread crumbs as for croquettes. Fry in deep fat or sauté in the frying-pan until tender. Tomato sauce may be served with the fish if desired.

REVIEW QUESTIONS

1. What is included under the name poultry?
2. What is included under game?
3. What is a "spring chicken"? a broiler?
4. How may the age of a fowl be determined?
5. What is the white meat of a chicken?
6. Is it tender or tough? Explain the structure.
7. What foods should not be used in a meal when chicken is served?
8. In what forms may fish be found in every market?
9. What kinds of fish, fit for food, are caught in the rivers and lakes in this locality?
10. In what ways have you seen fresh fish served, other than fried or sautéed?
11. What is the price of oysters per quart? per pint?

12. How are oysters kept at the store?
13. Is it economical to serve scalloped oysters and meat in the same meal? Why?

DESSERTS

Desserts may be divided into four large groups: (1) fruits, either fresh, dried, or cooked, (2) puddings, (3) pastry, (4) frozen desserts; as a fifth, cakes may be added.

Elaborate desserts, which require a great length of time spent in preparation, should not be used often in most households, because simple desserts taste just as well and the housekeeper may use her time for more useful work, or for recreation.

In choosing a dessert to use at the end of a meal, one must consider what foods have already been served in the other courses. If everyone has had all the food needed and feels satisfied before dessert is served, it is then a wise plan to omit dessert. When a dessert is served *after a heavy meal* it should consist of fruit or a gelatine pudding, rather than of pie or a rich pudding. When pie is served it should follow a meal in which little fat and protein have been eaten. No one should eat pie three times a day, nor every day.

A pie should have a light, flaky, tender *crust* that is thoroughly baked. Pie crust must be chewed thoroughly, since even the best is hard to digest. It is easier to make tender pie crust from pastry flour, because that contains less gluten and more starch than bread flour. Bread flour may be used, however. Many kinds of fat are used in pie crust, such as lard, butter, vegetable fats and oils. Fat makes the crust "short" and flaky, and is often

called "*shortening.*" The crust is made tender by careful handling, and by folding and rolling several times so that air is folded into the dough. This air, and the steam formed from the water used in the mixture, expand the dough during baking and make the pie crust light.

Desserts containing eggs and milk should be served only at the end of a meal when little protein has been eaten in the other courses.

Frozen desserts may be made, mainly of cream, milk, eggs and sugar, such as plain ice cream, French ice cream, or mousse; or they may be made of water, fruit juice and sugar, such as sherbet, water ice or frappé.

Desserts are frozen by the use of ice mixed with coarse or "rock" salt in the proportion of one part of salt to three parts of cracked ice. When ice melts, heat is absorbed from the surrounding materials. When salt is added, the ice melts at a lower temperature and a greater amount of heat is absorbed. The freezing of the mixture, in a can surrounded by ice, is brought about because the ice and salt absorb the heat from the contents of the can.

In freezing a mixture that is to be of a fine smooth texture, it is necessary to turn the crank of the freezer slowly and steadily. Ices and sherbets do not need such careful beating, and mousse is not beaten at all after it is put into the freezer.

HOME PROBLEMS AND QUESTIONS

Plan a dinner, consisting of meat, vegetables and salad, that is suitable for the season.

Plan one consisting of meat, vegetables, salad and dessert, suitable for the season.

Plan a "one-dish" meal.

Would other foods need to be added for the small child? If so, what would you add?

Plan a dinner in which custard pie might be served.

The following dinner will be served during the next laboratory period:

Swiss steak with gravy
Candied sweet potatoes
Salad: green beans, chopped onion and parsley, with French dressing
Lemon gelatine with whipped cream

Make a plan for preparing the dinner. What proportions of each recipe should be made for the number to be served?

Make a list of the food, with the amount that will be needed for the meal. Give the order in which the food is to be prepared. What dishes will be needed for serving the meal in the English style? Bring the plan to class for discussion.

Find in the dictionary or encyclopedia what you can about spices, such as nutmeg, cloves, cinnamon, mustard and ginger; also about pepper and salt. How is vinegar made? From what is extract of vanilla made?

LABORATORY EXERCISES

DESSERTS

PLAIN PASTRY

1 c. flour	½ tsp. salt
⅓ c. lard	Ice water

Sift the flour before measuring it. Add salt to flour, and sift again. Cut in shortening with two knives. Add just enough water to make a dough that can be rolled. Chill, roll out, fold, roll again, repeating two or three times.

When a crust is to be baked without a filling, the dough may be placed on the outside of the pie-pan turned upside down. Prick the crust well with a fork to keep it from blistering. A pie crust should be baked in a hot oven. Care must be taken, however, not to burn the edges.

Let members of the class suggest fillings for a one-crust pie. Perhaps some can bring a good recipe that may be used in class.

Fruit pies are much easier digested if they are made with only a top crust. The fruit is placed in a deep pie-pan of earthenware, enamel ware, or glass. The crust is then placed over the top, pressed down well on the edge, and baked. When two crusts are used, the lower crust must be baked thoroughly and the pie should be removed from the pan as soon as it is taken from the oven. The steam which collects on the pan has a tendency to make the lower crust soggy.

This is a good pudding to use for Thanksgiving or Christmas:

STEAMED PUDDING

2 c. bread crumbs	$\frac{1}{2}$ c. suet
$\frac{1}{2}$ tsp. soda	$\frac{1}{2}$ c. molasses
$\frac{1}{8}$ tsp. cloves	1 egg
$\frac{1}{8}$ tsp. cinnamon	$\frac{3}{4}$ c. milk
$\frac{1}{4}$ tsp. salt	$\frac{1}{2}$ c. currants

$\frac{1}{2}$ c. raisins

Mix a little flour with the suet, then chop it in a chopping-bowl with a chopping-knife, or put it through the meat-grinder. Beat the egg and add the milk. Wash the raisins and currants in a wire strainer by running cold water through them; dry on a towel; cut the raisins in halves. Mix the raisins and currants with a little flour,

as this makes them mix with the dough more easily. Add crumbs, spices, soda, currants, raisins and suet to the milk-and-egg mixture. Then add the molasses. Pour into a well greased pudding mold. Steam two hours. Remove lid of pudding mold, place pudding in oven and bake for a few minutes. Serve with any kind of sauce desired.

HARD SAUCE

$\frac{1}{3}$ c. butter — 1 tsp. vanilla
1 c. powdered sugar

Cream the butter and add sugar gradually, beating until the sauce is light and creamy; add flavoring. Set in a cool place until served.

PUDDING SAUCE

$\frac{1}{2}$ c. sugar — 3 tbsp. butter
$\frac{3}{4}$ c. water — $\frac{1}{4}$ tsp. vanilla
A little cinnamon or nutmeg may be added

Boil together until the sauce is of the desired thickness. This may be varied by pouring the hot liquid over a well beaten egg. Beat mixture thoroughly. Why should the mixture be poured over the egg slowly?

REVIEW QUESTIONS

1. Into what groups may desserts be divided?
2. Should elaborate desserts be served often in most homes? Why?
3. When should pie be eaten?
4. What is "shortening"?
5. State the characteristics of a good pie crust.
6. What makes the crust "light"?
7. What kind of desserts may be served at the end of a heavy meal?
8. What materials are used for freezing desserts? in what proportions?
9. Explain the freezing of ice cream.
10. How is a smooth texture obtained in a frozen mixture?

LABORATORY EXERCISES

SERVE A DINNER

Suggested Menu for a company dinner:
Bouillon, wafers
Swiss steak with gravy
Candied sweet potatoes
Salad: green beans, chopped onion and parsley
Lemon gelatine with whipped cream
Date cakes
Plan other company dinners.
Plan a menu for a Thanksgiving dinner.
Plan a menu for a Christmas dinner.
Discuss the cost of all meals served.

THE DAILY MEALS OF THE FAMILY GROUP

The three meals that are eaten daily by the family group have been studied separately, but before leaving the subject it is necessary to consider the making of the plans for the day and for the week. One meal may be planned correctly, but the diet is not well balanced unless the three meals for each and every day furnish the proper amount of foodstuffs for body-building and for warmth and energy.

How, then, shall one know when enough of the right kind of food is eaten? Persons who have studied the science of nutrition have set standards to follow that are a great help to the housekeeper.

Heat and energy furnished by a given amount of food are measured by the scientist, and the unit of measure that he uses is called a *Calorie*. A Calorie is the amount of heat required to raise the tempera-

ture of one pound of water four degrees Fahrenheit, or a kilogram of water one degree centigrade.

By placing food in a food calorimeter, a machine designed for the purpose, it is possible to measure

SERVING THE DINNER WITH A TEA-CART

how much heat will be produced from a certain amount of food when it is burned, or oxidized. In a machine called a respiration calorimeter, it is possible to measure the amount of warmth and energy used by a person in doing work, or in merely keeping the body warm and active. Even when quiet, a certain amount of energy is being used by the body, as for example in breathing.

Since, then, the scientist is able to measure in Calories the amount of heat required by the body, and is also able to measure how many Calories are furnished by portions of different foods, it becomes possible for him to set a standard for the daily requirements of food. This requirement varies with the age, the size, the weight and the work being done by the person eating the food.

The following is one *standard of food requirements:*

WARMTH AND ENERGY REQUIREMENTS FOR ONE DAY

MEMBER OF FAMILY	AGE	WEIGHT IN POUNDS	TOTAL CALORIES REQUIRED
Man	40	154	2770
Woman	37	125	2250
Baby	1	21	840
Boy	3	35	1400
Boy	12	75	2250
Girl	6	41	1394
Girl	9	56	1848
Woman	90	110	1500
Total			14252

A list of the number of Calories furnished by a pound of the different foods has been made and

published in a bulletin issued by the Office of Experiment Stations, U. S. Department of Agriculture, Washington, D. C. It is entitled "The Chemical Composition of American Food Materials." It is difficult, however, to learn from this bulletin, without the use of a great deal of arithmetic, just how much food should be used to furnish a certain number of Calories, and for this reason there have been prepared convenient tables of *standard portions* of the dishes ordinarily used. A "standard portion" is the amount needed to furnish 100 Calories and it is sometimes called a "100-Calorie portion."

At the end of this section will be found a list of 100-Calorie portions of foods.

The following method should be used when calculating the number of Calories being served in a meal:

1. Make a list of the foods to be used.
2. Decide on the size of the portion of each to be served — as, for example, whether a whole orange or one half orange is the amount to be used.
3. Look at the table of "100-Calorie portions" and find the size of the portion of each food needed to furnish 100 Calories to the body.
4. If the portion furnishing 100 Calories is more than you expect to serve, then multiply 100 by one half, one third, or by whatever proportion of the "100-Calorie portion" is to be served, to determine the number of Calories being supplied. For example, if one cup of cooked oatmeal is a "100-Calorie portion" and only a half cup of cooked oatmeal is being served, it will be necessary to multiply 100 by $\frac{1}{2}$ to determine the number of Calories served.
5. If the portion furnishing 100 Calories is less than the amount served, then 100 must be multiplied

by the number of times the portion is to be used to make the desired serving. For example, one half baked apple is a "100-Calorie portion", but if a whole baked apple is to be served, it will be necessary to multiply 100 by 2 to determine the number of Calories supplied.

The following is an example of the way of working out the number of Calories served for breakfast:

BREAKFAST

FOOD	AMOUNT SERVED	CALORIES
Orange	$\frac{1}{2}$ orange	50
Whole milk to drink	$\frac{3}{4}$ measuring cup	100
Oatmeal, cooked	$\frac{1}{2}$ cup	50
Cream, this for oatmeal	$\frac{1}{4}$ cup	100
Sugar for oatmeal	$\frac{1}{2}$ scant teaspoonful	25
Bread	1 slice, $\frac{1}{2}$ in. thick	100
Total Calories		425

Each meal may be worked out in the same way for each member of the family. The total amount of the foods needed for the entire family may be found by adding together the individual portions. No housekeeper will need to work this out every day, because after doing it several times she can estimate by the amount of food she is serving whether enough Calories are being supplied in the diet.

Other *necessary points* to be observed in planning the day's diet are:

1. Furnish variety in the diet by serving different kinds of food or by changing the method of preparation.

2. It is necessary to have all the foodstuffs repre-

sented in the day's diet, and it is best to have them in good proportions in each meal.

3. An attractive meal is enjoyed by the family. To be attractive it must be well cooked and served, and the foods combined properly in regard to flavor and appearance.

4. It is always wise to consider the cost, and to remember that the most expensive foods often have no greater food value than cheaper kinds. One fourth to one half of the average income has to be spent for food, and when the housekeeper is careless in selecting the food, more money than is necessary may be spent.

5. It is necessary to change the diet to suit the season of the year. The body requires less food for warmth in summer than in winter, and there is less used for muscular energy, therefore foods containing large amounts of fat are not required. Some of the foods to be avoided in summer are hot breads, fat meats, pastries, rich cakes, sauces and gravies.

6. It is very important to know that children need simple, well cooked foods, that milk is essential for every child, that butter is better for the child than a butter substitute because the butter contains vitamines, that fruits and cereals are essential, and that eggs, milk and cereals are better to use than a large quantity of meat.

7. No one can balance meals properly without knowing which foods contain the foodstuffs needed.

HOME PROBLEMS AND QUESTIONS

Plan meals that might be used by your family for a day in summer.

Plan the meals for a day in winter.

Make a list of groups of vegetables that may correctly be served together.

Estimate the cost of the following meal for six persons:

Broiled mutton chops
Baked stuffed potatoes
Tomato salad with French dressing
Sliced peaches with cream
Sponge cake

LABORATORY EXERCISES

FROZEN DESSERTS

VANILLA ICE CREAM

1 qt. cream
1 tsp. vanilla
¾ c. sugar

Wash and scald the can, cover and dasher of the freezer. Carefully place the can in the freezer. Place the ice in a heavy cloth sack and pound until it is broken into very small pieces. Crush the rock salt or coarse salt. Pack the freezer with alternating layers of ice and salt, until the ice is just below the top of the can. Have the ice-cream mixture ready and pour it into the can; place the dasher in the can; cover; add ice until the can is covered. Turn the dasher slowly and steadily until it will not turn any more. Remove ice and salt from top of can; wipe off carefully; remove lid from can; take out dasher carefully; cover can and put a stopper in hole in cover. Drain off all water from the tub, repack with ice and salt, using a little less salt (about four parts ice to one part salt). Cover the can with ice; cover freezer; set in cool place and let stand several hours.

If no freezer is available, two pans may be used for freezing, placing a small container in a larger one, and packing the ice and salt around it. The stirring is done

with a spoon. This method of freezing is successful only when a small quantity of ice cream is being made.

LEMON ICE

4 c. water
2 c. sugar
¾ c. lemon juice

Boil sugar and water together for five minutes. Add lemon juice. Strain if not clear. Freeze.

CHOCOLATE MOUSSE

1 pt. cream
½ c. powdered sugar
4 oz. chocolate
¼ tsp. salt

Cut the chocolate into small pieces, or grate it. Place in a small saucepan in a pan of boiling water until it is melted. Whip the cream; add sugar, salt and melted chocolate. Turn into a mold, and pack the mold in a pan of ice and salt. Let it stand five hours.

Smaller proportions of the recipes may be made if desired; then the freezing will require less time.

100-CALORIE PORTIONS

While the mixtures are freezing, let the class examine 100-Calorie portions of the following foods that have been prepared by the teacher: eggs, beefsteak, bacon, bread, butter, oatmeal, milk, cheese, potatoes, dried beans, apples, onions, carrots, rice, macaroni, olive oil, cotton-seed oil.

What portion of each of these foods would usually make one serving? Calculate how many Calories would be furnished by the following meal, using the table at the end of this section:

Broiled beefsteak
Baked potato
Lettuce with French dressing
Baked apple

REVIEW QUESTIONS

1. Define the term "Calorie."
2. What is a "standard portion"? By what other name is it sometimes called?
3. How do scientists determine how many Calories we need each day?
4. Which of the foodstuffs yield warmth and energy? Which of these are used by the body in other ways than for the production of warmth and energy?
5. How should the foodstuffs be distributed in the meals eaten in one day?
6. Can you explain why the boy twelve years old requires a greater number of Calories per day than the woman ninety years old?
7. Are the following meals for a day well planned? Explain the reason for your answer.

BREAKFASTS

(1)	(2)
Eggs and bacon	Baked apple
Cocoa	Oatmeal
Hot baking-powder biscuit	Toast
	Cocoa

LUNCHEONS

(1)	(2)
Cream soup	Bouillon
Cheese strata	Apple salad with cooked dressing
Salmon salad	Lemon gelatine
Bread and butter	Bread and butter

DINNERS

(1)	(2)
Roast beef	Baked stuffed potatoes
Baked beans	Buttered carrots
Lettuce with French dressing	Fresh celery
Rice pudding	Apple pie
Bread and butter	Cake

8. What foods is it well to avoid in hot weather? Why?
9. Name some foods that may be served to small children; some that should not be served.

10. Why is butter better for the child than a butter substitute?
11. State rules, regarding the purchase of food, that will help reduce the amount of money spent.
12. What are the characteristics of an attractive meal?

100-CALORIE PORTIONS OF UNCOOKED FOODS

FOOD	WEIGHT IN OUNCES	MEASURE	REMARKS
Apple	7.4	1	large size
Bacon	0.6	slice	$4\frac{1}{2}$ by $1\frac{1}{2}$ by $\frac{1}{16}$ inches
Banana	5.5	1	large size
Beef, round steak	2.2	1 serving	$2\frac{1}{2}$ by $2\frac{3}{4}$ by $\frac{1}{2}$ inches
Butter	0.5	1 tablespoon	
Carrot	10.0	1	length $6\frac{1}{2}$, diameter 2 inches
Cabbage	11.2	5 cups	shredded
Corn on cob	9.0	2 ears	6 inches long
Cottonseed oil	0.4	1 tablespoon	
Cheese, American	0.8	cube	$1\frac{1}{8}$ inches
Cream, 40%		2 tablespoons	
Eggs	2.4	1	very large
Flour, white	1.0	$4\frac{1}{2}$ tablespoons	
Lettuce	18.5	2 heads	large size
Macaroni	1.0	$\frac{1}{4}$ cup	broken into 1-inch pieces
Milk, whole	5.0	$\frac{3}{4}$ cup	
Mutton chops	1.0	1 chop	
Navy beans	1.0	2 tablespoons	dried
Oatmeal	1.0	$\frac{1}{4}$ cup	rolled
Olive oil	0.5	1 tablespoon	
Onions	7.0	4	medium-sized
Orange	9.5	1	large
Peach	10.5	3	medium-sized
Peas, green	3.5	$\frac{3}{4}$ cup	shelled
Rice	1.0	2 tablespoons	
Sweet potato	3.6	$\frac{1}{2}$ potato	medium-sized
Sugar	0.9	2 tablespoons	scant
Tomato, fresh	15.5	2 or 3	medium-sized

100-Calorie Portions of Cooked Foods

Food	Weight in Ounces	Measure	Remarks
Apple, baked . . .	2.3	½ apple	large size, 2 tbsp. sugar
Baking-powder biscuit	1.2	2 biscuits	small
Bread, white, baker's .	1.0	1 slice	½ inch thick
Corn, canned . . .	3.5	1 serving	
French dressing . .	0.6	1½ tablespoons	
Mashed potatoes . .	3.5	½ cup	scant
Mayonnaise dressing	0.5	1 tablespoon	
Potato, baked . . .	3.0	1	medium-sized
Oatmeal, cooked . .	7.9	1 cup	
Saltine cracker . . .	0.8	8 wafers	
Shredded wheat . .	0.9	1 biscuit	
Sponge cake . . .	0.9	piece	1½ by 1½ by 2 inches

THE PRESERVATION OF FOODS

Many kinds of fruit and vegetables, all meat, fish and poultry, soon spoil unless preserved in some way. The *spoiling* of food is brought about by molds, yeast and bacteria, which are called *micro-organisms*. Yeast and bacteria are so small that they can be seen only through a powerful microscope, but molds can be seen without using a microscope. All of these microörganisms require food, warmth and moisture for growth. They find food and moisture in many of our foods, and because they live in the food it changes and perhaps spoils.

Food is preserved either by killing the micro-organisms or by hindering their growth. There are *four methods* used: (1) by keeping food at a low temperature, (2) by drying, (3) by the use of preservatives and (4) by sterilization.

Foods in *cold storage* are kept at such a low temperature that the growth of the microörganisms is

hindered. Such foods as meat, eggs, green vegetables and fruits may be kept in this way for different lengths of time without spoiling.

Drying is used for preserving certain fruits and vegetables, meat and fish. The dried product lacks the moisture required by the microörganisms

Cold-pack Canning

Packing asparagus into the jar.

for growth; therefore their action in the food is hindered.

Preservatives are materials used to hinder the growth or to kill microörganisms. Sugar in quantity, salt, vinegar and spices are harmless preservatives. Saltpeter and smoke are also used. There are also harmful substances that will preserve the

food, but which are not healthful to use, such as formaldehyde, benzoic and salicylic acids.

The best method for preserving food is to kill the microörganisms by the use of heat. This process is called *sterilization*. In canning, the food is sterilized and then sealed in sterilized containers so that no more microörganisms can reach it from the air. Fruits, vegetables, meats, fish and poultry may be preserved by this method.

LABORATORY EXERCISES

PRESERVATION OF FRUIT

MARMALADES

The general rule for the proportion of ingredients in marmalades is as follows:

Use one half as much sugar as fruit, by weight.

Use three cups of water to each pound of sugar.

Make orange marmalade:

ORANGE MARMALADE

1½ doz. oranges	Water
6 lemons	Sugar

Wash fruit; slice in very thin pieces without removing skins; remove seeds; cut into small pieces. Weigh the fruit, calculate the sugar that is needed; calculate the water that is needed. Place the water over the fruit and let it stand twenty-four hours. Boil gently for two hours, add sugar, and boil until the syrup is as thick as desired (usually about one hour). Place in small sterilized jars or glasses; set aside to cool.

When the marmalade is cool, melt paraffin and pour over the top; cover the jars or glasses with lids or paper.

GRAPE CONSERVE

2 qts. grape juice	2 lbs. seeded raisins
3 lbs. granulated sugar	1 lb. English walnut meats

Boil the grape juice with the raisins and sugar, until it thickens when a drop is placed on a cool saucer. Add walnuts, chopped fine. Cook a few minutes; place in sterilized jars or glasses. Cover the conserve with paraffin when it is cold.

GRAPE JUICE

10 lbs. Concord grapes
2 lbs. sugar
2 qts. water

Wash the grapes and remove them from the stems, add the water; boil until the skins are soft. Strain through a wet jelly-bag. Re-heat the juice and add the sugar; boil for two or three minutes. Pour into hot sterilized jars or bottles; seal. When corks are used in the top of bottles, seal by using paraffin. This juice may be made in the fall, and the conserve made during the winter.

The grapes left in the jelly-bag may be run through a wire sieve, and the pulp added to the grape conserve, if the conserve is to be made at the same time as the grape juice. If not, the pulp may have sugar added and be boiled until thickened, and used as grape butter.

SWEET PICKLED PEACHES

7 lbs. peaches (after stones are removed)
$3\frac{1}{2}$ lbs. sugar
2 oz. cinnamon
1 qt. vinegar
2 oz. cloves

Make a syrup of the sugar, vinegar, stick cinnamon and cloves; boil until it is thickened. Cut peaches in halves. Add peaches and cook until they are tender. Remove each piece with a spoon and pack in a sterilized jar; boil the syrup until it is thick, and pour it over the fruit.

REVIEW QUESTIONS

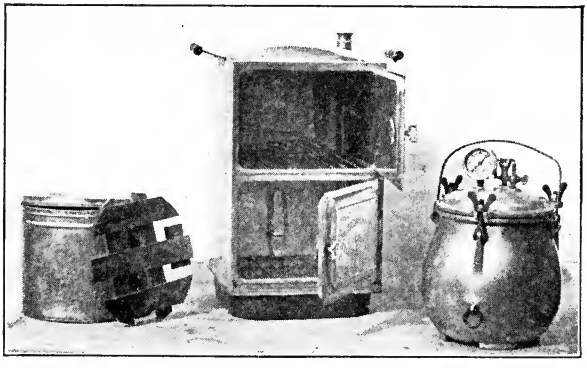
1. What causes the spoiling of fruits, vegetables and meats?
2. How is food preserved?
3. What foods are kept in cold storage?
4. What foods may be dried?

5. Name the materials that are used to preserve food.
6. What is the method of preservation used in making orange marmalade? sweet pickled peaches?
7. What is meant by sterilization?
8. What is a sterilized jar? (See section on Jelly-making.)
9. Why must the sterilized jars be used while they are hot, and without wiping them out with a towel?
10. Which method of preservation is the best to use for food when it must be kept for long periods?

CANNING

Canning may be done in two ways:

1. *Open-kettle method*, when the food is cooked until it is tender and sterilized, and is then put in



TYPES OF CANNERS

Left to right: hot-water bath, steam cooker, pressure cooker.

sterilized jars and immediately sealed. This is the oldest method of canning foods.

2. *Cold-pack method*, when the food is packed in jars, the jar filled with liquid, — which may be syrup, water, or broth, — the rubber adjusted to the can, the cover placed in position, but only

partly screwed or clamped on, and the jar placed in a cooker in which the food will be sterilized and cooked until tender. The jar is then removed from the cooker and sealed at once.

Cookers used for canning by the cold-pack process are (1) the steam-pressure cooker, (2) the steam cooker and (3) the hot-water bath cooker, the last being the most commonly used. This cooker can be made at home by using a wash-boiler or other container that has a lid and a false bottom, or rack,

Types of Jars Used in Canning

to raise the jars at least three quarters of an inch or an inch off the bottom of the container. The steam-pressure cooker and the steam cooker are manufactured in different types.

Canning can be done in the shortest time with the pressure cooker, but the product is no better than that secured with the hot-water bath. Both the steam-pressure cooker and the steam cooker can be used for other kinds of cookery than canning, which makes them comparatively less expensive.

There are numerous *types of jars* that may be used, and any type is satisfactory when the cover

fits well and is in a sanitary condition. Many old screw-top jars are not fit to use unless new lids are purchased, because dirt cannot be cleaned from the crevices when it has collected in the old lids. In buying new jars, it is better to select those with glass lids and a large "mouth" or opening. Tin cans may be used instead of glass, but any food that will keep in tin will be more easily and safely canned in glass. Tin is used in commercial canning, because tin containers can be more easily packed and shipped.

Good *can-rubbers* are necessary if the products placed in the cans are to keep well. Rubbers should

Attractive Jars of Fruits and Vegetables

be tested before being used, by stretching them to see if they will break, and by doubling them together and pressing at the fold to see whether the rubber will crack. Good rubbers will not be affected by either test.

Select for canning, firm fresh fruit that is not overripe, vegetables that are fresh and crisp, and meat that is in perfect condition. If poor products are used, the results will be poor.

Vegetables and meat are most successfully canned by the cold-pack method. Fruits keep their shape and color better when canned by this method, but

the open-kettle method may be used more successfully with fruits than with vegetables and meats.

LABORATORY EXERCISES

CANNING FRUITS AND VEGETABLES

To can pears by the cold-pack method: Wash the pears, peel, cut into halves and remove the cores. Place in a clean, hot, tested jar, packing carefully. Over the pears pour boiling syrup until the can is filled to within one fourth inch of top; adjust lid and partially seal. Place can in hot-water bath cooker, having the water deep enough to come one inch above the top of the can. The time for boiling, or "processing" as it is called, is given in the table at the end of the lesson. Remove can from cooker and seal at once. Follow the directions about removing the can which come with the pressure cooker. Never remove the lid from the can after processing. Turn the can upside down, so that it can be observed for leakage (which means a poor seal) and place where there is no draft. Lay a towel over the cans until they are partly cooled. This will prevent any chance of a draft reaching the hot can and causing it to crack. When cold, jars may be wrapped in paper and stored, or placed in a dark, cool, dry place without wrapping.

To test a jar: Fill the jar half full of water. Test the can-rubber. Place the rubber and lid on can. Seal. Turn can upside down. If it does not leak after standing a few minutes it is in good condition to use for canning. When using the jar, be sure that the same lid with which it was tested is replaced on the jar. If a jar leaks, remove the lid and test with another lid. In using glass lids there sometimes will be found a rough spot on the lid or on the jar that may be removed by scraping with a knife, after which the fit will be perfect.

If jars are heated before using, then hot syrup, water, or broth may be poured into them without cracking the

jar, and the jar may be placed in hot water in the water bath, which means a saving of time in cooking.

SYRUP FOR CANNING

Use three cups of sugar to two cups of water, boiling until as thick as desired. Usually for canning fruit by the method given for canning pears, a medium thick syrup would be best to use. A medium thick syrup is one that has begun to thicken and becomes sticky when cooled on the spoon. For very sour fruits a thicker syrup should be used.

To can tomatoes by the cold-pack method: Scald or " blanch " tomatoes $1\frac{1}{2}$ minutes. The easier way to do this is to place the tomatoes in a frying-basket and set the basket into boiling water. Lift out the basket and dip at once into cold water. Remove from water, remove skins and stem-ends. Pack tightly into tested jars, pressing down gently but firmly. This will cause enough juice to form in the can so that no boiling water need be added. Add 1 teaspoon salt to each quart. Adjust rubber and lid, partially seal. Place in hot-water bath, steam cooker, or pressure cooker. Cook for the required length of time, as given in the table at end of lesson. For finishing the canning, follow directions given in the recipe for canning peas.

All vegetables must be blanched, then cold-dipped before packing in cans. This reduces the bulk, does away with objectionable flavors and makes the color better. In canning most vegetables, it is necessary to add boiling water to fill the can after the food is packed in the can. The can should be filled to within a quarter inch of the top.

TIME TABLE FOR PROCESSING FRUITS AND VEGETABLES

This is the time required for quart jars. For pints, reduce the time five minutes.

	For Hot-water Bath	For Pressure Cooker	For Steam Cooker	Blanch for Either Method
	Minutes	Minutes	Minutes	Minutes
Apples	15 to 25	5 lbs. for 10	15–25	2
Beans, string	120 to 180	20 lbs. for 40	120–180	5 to 10
Cherries	16	5 lbs. for 5 to 6	16	1
Corn	180	20 lbs. for 40	180	5 to 15
Greens	90	20 lbs. for 30 to 35	120	15 to 20
Peaches	20	5 lbs. for 5 to 10	20	$\frac{1}{2}$
Pears	20 to 30	5 lbs. for 5 to 10	20	$1\frac{1}{2}$
Peas	120	20 lbs. for 40	120	5 to 10
Pineapple	20 to 30	5 lbs. for 10	20	3
Sweet peppers	90	20 lbs. for 35	90	10
Strawberries	8 to 16	5 lbs. for 5 to 6	8–16	——
Tomatoes	22	10 lbs. for 10	22	$\frac{1}{2}$ to 1

REVIEW QUESTIONS

1. Name the two methods used for canning fruits, vegetables and meats.
2. Which is the older method? the better method?
3. Name the types of cookers that may be used in canning. In which can the processing be done most rapidly?
4. What are the necessary characteristics of a jar used for canning?
5. What type of jar is best to purchase?
6. What is the price per dozen of pint jars? of quart jars? of half-pint jars?
7. Is it advisable to use tin cans for home canning?
8. State the method for testing rubbers.
9. How should a jar be tested before using?
10. What should be the quality of fruits and vegetables selected for canning?
11. What is meant by the term "processing"? blanching?
12. Why must the lids never be removed from the cans after processing?

JELLY-MAKING

Jelly is made from the juice of fruits. *Good jelly* is clear, of a pleasing color, tender and firm enough to keep its shape when turned out of the mold. It

should not, however, be so stiff that it does not "quiver."

Fruit juice can be made into jelly when it contains *two substances*, (1) *pectin* and (2) *acid*. All fruits do not contain these in sufficient amounts to make good jelly; and often it is necessary to combine the juices of two fruits before the juice will "jell." Sugar helps to make the juice form jelly, but unless pectin and acid are present, no amount of sugar will have that effect.

Types of Jelly-glasses

Fruits used for jelly should not be over-ripe, and sometimes it is better to use green fruits, because as fruit ripens it contains less pectin and acid. Tart apples, grapes, currants, crab apples and plums are good fruits to use for making jelly. Sweet ripe apples, strawberries, blackberries, peaches and pears are poor fruits from which to make jelly.

Lemon and *orange peel* contain pectin in considerable amounts and are sometimes used to make fruit juices "jell." Remove the yellow layer of the peel and put the white material that is left through the food-grinder, cover with water and let stand several hours, then cook slowly for two or three hours, strain the liquid and add it to the fruit juice that lacks pectin.

Sometimes fruits lack acid and are improved for jelly-making by adding lemon juice.

It is always best to *test the juice* in order to determine how much sugar should be added to make

good jelly, since fruits of the same variety vary when grown under different conditions. This is done by placing one teaspoonful of fruit juice and one teaspoonful of grain alcohol together in a glass and allowing it to stand for five minutes. Pour slowly from the glass and observe the mass formed; if a firm mass that does not break apart has been formed, then the proportion of one cup of sugar to each cup of juice is correct; if the mass breaks apart into several pieces, use three fourths of a cup of sugar to one cup of juice; if the mass shows no distinct lumps, use one half cup or less of sugar to each cup of juice. This test saves a great deal of time and trouble in making jelly.

In *straining* the juice from the fruit after cooking, a jelly-bag is used. It is usually made from firm cotton cloth that has been thoroughly washed and boiled. The bag may be made three-cornered in shape, so that the juice drips from a corner when hung to drain.

Jelly is usually put up in *glasses* made for the purpose. These should be sterilized by placing them in cold water, bringing it to the boiling-point and boiling for twenty minutes. Do not wipe the glasses; take them from the water with a lifter or wooden spoon and fill at once.

Jelly should be *covered*. An easy method is to use paraffin, which may be melted and poured over the top of the jelly. Cover the glasses, either with the lid that comes with the regular jelly-glass, or with white paper tied on. Store in a dark, cool, dry place.

LABORATORY EXERCISES

JELLY-MAKING

Experiment: Test the following juices to determine what proportion of sugar to juice should be used: grape, sweet apple, plum, crab apple, peach. If necessary, add a measured amount of juice, extracted from lemon peel or orange peel, to the tested juice to make it respond to the test.

CRAB APPLE JELLY

Wash the apples, cut into quarters and remove cores. Add water to the apples, using about half as much water as there is fruit. Boil until tender; place in wet jelly-bag; drain, but do not squeeze bag. Measure the juice and measure the amount of sugar to be used according to the pectin test. Boil the juice a few minutes; add the sugar, which has been warmed by placing in the oven; boil gently until the jelly coats the spoon or until a drop "jells" when dropped on a cold saucer. Pour into hot sterilized glasses.

What can you make from the pulp and skins in the bag?

GRAPE JELLY

Choose grapes that are not over-ripe; wash and pull from stems; place in stew-kettle; add one cup of water for each four quarts of grapes. Cook until the grape skins burst and the fruit is thoroughly softened; place in wet jelly-bag to drain. What proportion of sugar should be used? Follow directions given under Crab Apple Jelly.

REVIEW QUESTIONS

1. What two substances must fruit contain before good jelly can be made from it?
2. Give the steps in jelly-making.
3. How should a jelly-glass be sterilized?
4. How should jelly be cared for after it is cooled?
5. What are the characteristics of good jelly?

CHRISTMAS LESSONS

Home-made candy, packed attractively in pretty boxes or baskets, makes a good Christmas gift.

Small children are better without candy, but it may be used by older persons if it is eaten in reasonable amounts. Candy is more easily digested at the end of a meal than between meals. Candy contains a large proportion of sugar, and sugar when eaten alone is irritating to the digestive organs. A great deal of sugar is found in some dried fruits, such as raisins, dates and figs, and in this form sugar is better for the small child than in candy.

Loaf, granulated and powdered are the forms in which *sugar* is sold. Sugar is made either from sugar cane or sugar beets. The juice which is extracted goes through many processes before the sugar is ready for the market.

When making candies that are to be of a creamy consistency, it is better to use part glucose instead of all granulated sugar. *Commercial glucose* is a syrup that does not crystallize, and therefore helps to keep the candy smooth and creamy. Commercial glucose is manufactured by boiling cornstarch with an acid, and is usually sold in tin containers.

By boiling candy mixtures to different temperatures, different types of syrup may be made. It is always best to use a candy thermometer in order to know when the syrup is cooked enough but not too much. When making fudge, panocha and fondant, the candy should be cooked until it reaches the "soft-ball stage", 236° F.; for chocolate caramels, cook to the "hard-ball stage", 254° F.; for

butterscotch, popcorn balls and molasses taffy, cook to the "crack stage", 270° F.

Caramelized sugar is sugar that has been heated without moisture until it melts and becomes a brown syrup. When this is poured over peanuts it is known as "peanut brittle." Caramelized sugar is used also for flavoring custards and cake icings, and in sauces.

Other materials that may be used in cookery to take the place of sugar are honey, maple sugar and syrups of different kinds.

LABORATORY EXERCISES

CANDIES

FONDANT

2 c. granulated sugar ½ c. cold water

Mix the sugar and water, place in saucepan over the fire and stir until sugar is dissolved. Allow the syrup to boil gently until it reaches the "soft-ball" stage. Turn into a greased platter and let stand until a thin film forms on the top, then beat with a wooden spoon until it becomes creamy and white. Wash the hands in cold water and knead the fondant. Wrap the fondant in oiled paper and let it stand in the ice-box a few hours, or longer if desired. It is then in good condition for making into various kinds of candy.

Use in the following ways:

1. Add chopped English walnut meats to some of the fondant, flavor with vanilla, mold into balls.
2. Cover almonds with flavored fondant.
3. Remove the seeds from dates and refill with the flavored fondant.
4. With a toothpick, take up a tiny bit of coloring material and add to fondant. Knead until thoroughly mixed, add any flavoring preferred, mold into shape desired.

PEANUT BRITTLE

1 c. sugar
½ c. peanuts

Place sugar in frying-pan over fire and stir until the sugar is melted and the syrup is a light brown color. Add peanuts and pour immediately into a buttered pan or plate. Mark into squares when the brittle is slightly cooled.

PANOCHA

1 c. brown sugar
1 c. granulated sugar
½ c. milk
1 tbsp. butter
1 c. nut meats
1 tsp. vanilla
1/16 tsp. salt

Mix sugar, milk and salt. Boil until it reaches the "soft-ball" stage; add butter, vanilla and chopped nuts; cool slightly, beat until thick, spread on buttered pan. Mark into squares before it is too hard to cut easily.

PARISIAN SWEETS

1 c. figs
1 c. dates
1 c. nuts

Clean dates and figs, and grind the three ingredients through food-grinder. If they are mixed before grinding they blend more easily. Place on bread-board dredged with powdered sugar, knead thoroughly, press out into sheets about one half inch thick. Cut into squares; roll each square in powdered sugar.

SALTED ALMONDS

Use Jordan almonds if possible. Blanch by letting them stand in boiling water until the skin is loosened. Remove the skins, being careful not to break the almonds apart when handling them. Place olive oil in a frying-pan and when it is hot add the nuts; stir over fire until nuts are a light brown color; remove from fat and drain on paper. Sprinkle with salt.

REVIEW QUESTIONS

1. When should candy be eaten? Why?
2. What may be substituted for candy when a small child wants sweets?
3. From what is sugar made?
4. In what forms may sugar be purchased?
5. What is the price per pound of granulated sugar? of powdered sugar? of lump or loaf sugar?
6. How is loaf sugar used?
7. Why is it better to use a thermometer when making candy?
8. To what temperature should a syrup be cooked for the "soft-ball" stage? "hard-ball" stage? "crack" stage?
9. Give examples of candies with which each of these temperatures should be used.
10. What is caramelized sugar?

THE CARE OF THE HOUSE

The housekeeper who does her work most easily follows a plan or *schedule*. Such a schedule will need to be varied often, because of interruptions of different kinds, but having the plan helps to prevent friction, saves time and energy, and makes possible some time that can be used for recreation. There is certain work, such as making beds, planning and cooking meals, that must be done every day and is called "daily tasks"; there are certain other duties, such as the laundry work, that come once a week and are called "weekly tasks"; and there is work that does not come so frequently, such as canning fruit, which is called the "occasional tasks."

When making a schedule, first make a plan for the daily tasks, allowing time that can be used for the weekly and occasional tasks. The *arrangement of the work* will depend upon the location of the home,

the type of family, the standard of living, and whether household helpers are employed. The beginning housekeeper will have to experiment with her work until she finds the best arrangement of tasks.

Good equipment, including labor-saving devices for housework, will save the housekeeper a great deal of time and energy. *Good equipment for cleaning* should include good brooms, dust mops, a wet mop with wringer, dust cloths, polishing cloths, cleaning powders, soaps, brushes, plenty of clean cloths, and a suction-sweeper if there are many large rugs or carpets to keep in order. A cupboard or closet in which all this equipment may be kept is a great convenience.

The *daily cleaning* will consist of using the dust mop on hard-wood or painted floors; perhaps it will be necessary to run the sweeper over some of the rugs, and the furnishings in the much used rooms will need dusting. Every room in constant use should be thoroughly cleaned once a week. Dust the small articles and remove them from the room; if the windows are to be washed, take down the curtains and remove them from the room for dusting; open the windows; wipe down the walls with a broom that is covered with a clean bag or cloth; use the suction-sweeper on the rugs, or a dampened broom if no sweeper is available; clean the floor with the dust mop; wipe the windows, or wash them if necessary; dust all the woodwork and furniture; rehang the draperies and replace the small articles.

When cleaning a bedroom, first remove all the bed-clothing from the room. Occasionally the mattress may be taken out, aired and sunned. The

mattress may be cleaned regularly with the suction-sweeper which has special apparatus for such purposes. If not taken out, the mattress should be covered with papers or a sheet while the room is being cleaned.

The bathroom needs some cleaning every day. Scour the washstand and tub with a mild cleaning powder; rinse thoroughly with clean water. Clean the faucets (directions are given in the section on dishwashing). Use a brush made for the purpose to clean the trap in the closet; wash off the outside of the closet and water tank. Use the dust mop on a hard-wood floor; a floor covered with linoleum should be mopped with clean water at least once a week.

Porches usually need sweeping every day, and must be scrubbed when necessary and the weather permits.

The equipment used in cleaning should itself be cleaned before it is replaced in the closet. Dry the wet mop thoroughly before hanging it away. Dust cloths must not be used when soiled; "oil dusters" are a good type to buy, because they catch and hold the dust. Never use a feather duster, because the dust it brushes off one place lodges on another.

The modern house, when cleaned carefully every week, closets cleaned when necessary, and curtains washed when soiled, does not require the general spring or fall "house-cleaning" so familiar to everyone.

HOME PROBLEMS

Arrange a plan for the work to be done in your home every day. Probably your mother already

has such a plan and will tell you which task she does first, second, etc.

What part of the work do you perform? At what time in the day do you do it? What are the weekly tasks done in your home? Do you help with any of them? How much time every week do you spend on these tasks?

Make a list of work that you consider "occasional tasks."

Clean one room at home and write a report telling just how you did the work.

THE CARE OF THE HOUSE (*Continued*)

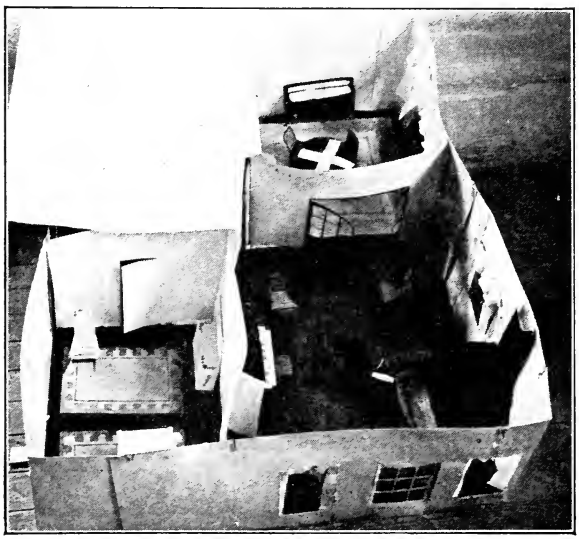
One of the "occasional tasks" to be done in every home is the cleaning and putting in order of the *closets*. This should be done as often as is necessary. Clothing that has been discarded should be removed and given, either to some person who can use it, or to a charitable organization, or put in the "rag-bag" to be sold to the junk dealer. Soiled clothing should not be allowed to hang in closets for long periods.

To clean the clothes closet: remove all clothing; assort and remove the articles that are not to be put back; take out all boxes, bags and shoes; wash the shelves with warm water and wipe dry; wash the inside of drawers in the same way; wipe floor, if not waxed, with a damp cloth; use an oil duster if the floor is waxed; air the closet thoroughly; dust and replace boxes; hang clothing, bags and cases.

Winter clothing, which is to be put away for the summer after being thoroughly brushed, or perhaps cleaned, may be placed in moth-proof cedar bags, chests, or drawers. Clothing, blankets, or rugs that

are to be put away must be clean and may be wrapped in papers to keep out the dust. When articles are stored in this way, it is wise to inspect them often to be sure that they are free from moths.

Boxes and bags can be labeled in such a way that articles may be easily found. A list showing where



PASTEBOARD HOUSE, WITH FURNISHINGS

In process of construction by the Home Economics class in Columbia City, Indiana.

each article is stored is *a convenient record.* This list might be put on cards that fit into a card-index box and thus be among the records that every housekeeper would find useful. Other records kept in the box might be: the sizes of garments worn by each member of the family; clippings from papers giving household hints, garden hints, or sugges-

tions for social affairs; addresses of persons or firms to whom one writes in a business or social way. Every housekeeper will make her own list of desirable records. The use of such a card file saves the loss of time and energy in "looking for things."

Drawers in dressers, chiffoniers and dressing-tables should be kept in order at all times, but it is a wise plan to remove everything from the drawers once a month and wipe out with a damp cloth. If the bottom of the drawer is not well finished, it may be covered with paper before the articles are replaced.

Curtains and draperies should be *cleaned* whenever they need to be. In cities where soft coal is used, it is often necessary to clean white curtains every month. Wool and silk draperies must be dry-cleaned at home or sent to a cleaning establishment often enough to keep them in a sanitary condition. White curtains of net or lace should not be ironed, but should be dried on curtain stretchers in order that they may not lose their shape. Scrim, voile and marquisette curtains look better when ironed. Muslin, Swiss, or lawn curtains should always be ironed. When washing any open-weave material, such as scrim, it is better to squeeze it between the hands than to rub it. Curtains should be well shaken and then soaked in warm soapsuds, washed in hot soapsuds, rinsed thoroughly in several waters, and if white must be put through bluing water; they may be slightly starched if desired. When curtains are to be dried and ironed, hang them, doubled lengthwise, with the lengthwise fold over the clothesline; never hang them by the

corners; dampen and fold carefully; iron crosswise of the curtain, being careful not to stretch the edges in any way.

There are many tasks about the home that can be performed by the daughter to assist the mother, and girls who study Home Economics should do such work well. Suggested work for the girl would include: caring for her bedroom, putting away her clothing, collecting her clothing for the laundry, polishing the silver, dusting, serving a meal and sometimes preparing a meal, washing dishes, mending, and helping with the care of a small child.

Housekeeping is a very interesting business, and every girl wants to be a good housekeeper — feeding, clothing and housing her family well. In addition she wishes to be a good home-maker, making the house a happy, inspiring place for children to develop in and for older people to enjoy. She is a good home-maker when she is intelligent, alert, happy and active; when she does her housework so efficiently that she has time to be interested in church, social and civic affairs, and to help make good conditions in her community.

HOME PROBLEMS AND QUESTIONS

To what organizations in the community do women belong?

What is the purpose of each organization?

What organizations for girls are there in your community?

Collect pictures of furnishings you would like to have in your bedroom. Furniture catalogues and advertisements in magazines and newspapers will

be helpful for this. Discuss in class the furnishings of the bedroom. Discuss the care of the bedroom. A booklet on "My Bedroom" might be made.

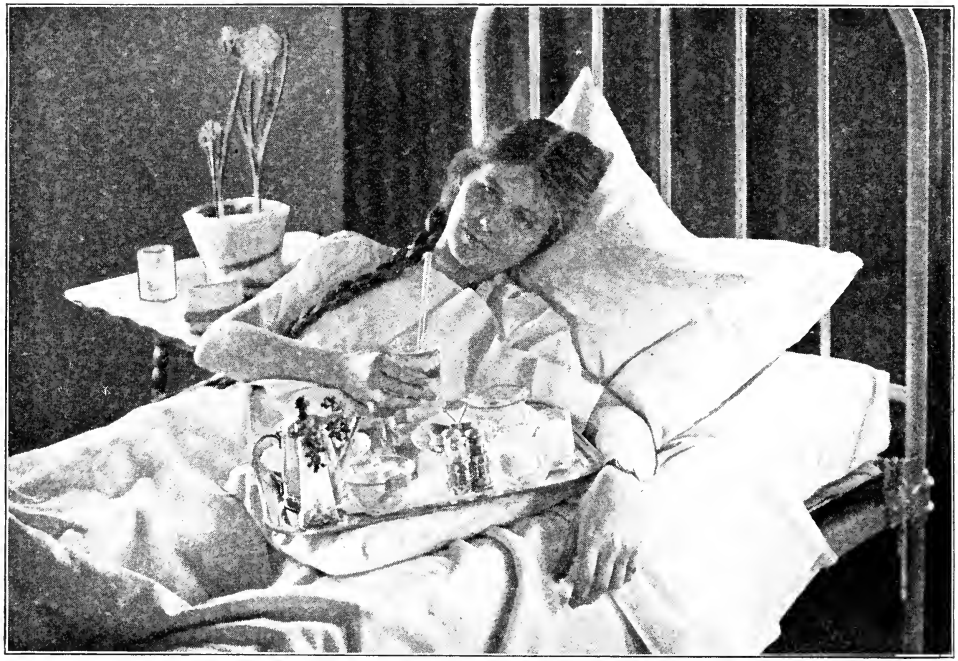
FOOD FOR THE SICK

When serious illness occurs in the family the patient is often taken to a hospital for treatment because there conditions are such that the best of equipment is available, with trained workers to look after the welfare of the patient. There are, however, many cases of illness not serious enough to make it necessary to send the patient to the hospital, yet in which the patient must stay in bed and have good care. In such cases some one in the home must do the nursing and should have some knowledge of such work.

One of the most important things for the home nurse to know is how to prepare and serve the food which the patient needs. Food is especially important, because a poorly nourished body cannot resist nor overcome disease, and in many cases regulating the diet is the main treatment. For special diet of this sort, the home nurse will follow carefully the doctor's instructions regarding kind, amount and preparation of food.

No one in bed can digest the kind or quantity of food that the person can who is taking exercise. Patients often are given too much food while in bed; in other instances the patient does not get enough food.

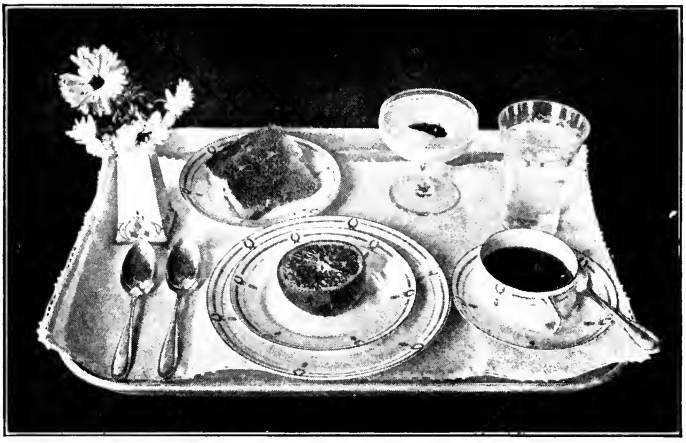
If the invalid's appetite is poor, perhaps it can be stimulated by serving fruit juice, by giving meat broth, or by making the tray extremely attractive.



INVALID'S TRAY, SUPPORTED BY PILLOW
Observe the glass tube through which liquid food may be taken.

To make the invalid's tray attractive there are several points to remember:

1. Do not have too great a variety of foods on the tray at one time.
2. Do not serve large portions of food.



Invalid's Tray, Well Arranged

3. Have all foods well cooked and served in a neat way.
4. Use attractive dishes and linen that is absolutely clean.
5. A flower on the tray makes it more attractive. It may be laid on the tray or placed in a small vase which is set on it.
6. Sometimes serving the meal as two courses will make it more appetizing to the patient.
7. Used dishes and trays should be removed from the room as soon as the patient is done with them.

8. The tray used for serving the meal should be large enough, but not so large that it is hard to handle. A rectangular tray is more convenient than a round one.

9. The temperature of the food served must be watched carefully. As a rule hot foods should be served hot and cold foods served cold, but under certain conditions the rule may have to be modified.

10. Never ask a sick person what kind of food is desired. When the food is a "surprise" it sometimes stimulates the appetite.

Dietaries for invalids may be classified in the following way:

1. *Liquid,* including broths, beef extract, beef tea, milk, gruels, eggnog, cream soups, cocoa, etc.

2. *Soft,* including soft-cooked eggs, milk toast, junket, cooked custards, jellies, etc.

3. *Soft solid,* including eggs, creamed toast, asparagus, baked custards, tender chicken, oysters, creamed sweetbreads, etc.

4. *Special diet,* one ordered by a physician for a particular case.

In many cases of illness it is well to consult the physician regarding the type of diet that the patient should be given. In the case of high temperatures, it is wise to give plenty of water with a liquid diet; in cases of bad colds, grippe, or similar diseases, a soft diet may be used; in cases of constipation, use coarse foods which contain large quantities of cellulose, such as Graham bread, vegetables, fruits and cereals. The fruits are especially valuable in the treatment of constipation because of the organic acids they contain. Any one troubled with consti-

pation should eat meals regularly, take plenty of exercise, drink plenty of water and should be regular in regard to the calls of nature.

The convalescent patient should have his or her requests for certain foods gratified whenever the food is suitable and the requests reasonable.

HOME PROBLEMS AND QUESTIONS

Read in books and bulletins on nursing about the proper kind of sick-room. Make a drawing showing how the room should be arranged.

What type of clothing should a home nurse wear? Why?

Perhaps a nurse in the neighborhood can give demonstrations on making the patient's bed, giving the patient's bath, and on first aid.

LABORATORY EXERCISES

INVALID COOKERY

JUNKET

¾ c. milk	¼ junket tablet
1 tbsp. sugar	1 tsp. cold water
¼ tsp. vanilla	Few grains salt

Dissolve junket tablet in the cold water. Heat milk in top part of double-boiler, add sugar, salt, flavoring and dissolved junket tablet. Pour quickly into small molds, let stand in a warm place until set, then put in a cold place to chill. Remove from molds and serve with or without sugar and cream. Sugar may be omitted if desired.

EGGNOG

1 egg	1½ tbsp. fruit juice *or*
¾ tbsp. sugar	¼ tsp. vanilla
Few grains salt	⅔ c. cold milk

Beat egg slightly; add sugar, salt and fruit juice slowly; and add the milk gradually. Strain and serve. Sugar may be omitted if the fruit juice is sweetened.

OATMEAL GRUEL

$\frac{1}{4}$ c. rolled oats	$\frac{1}{4}$ tsp. salt
$1\frac{1}{2}$ c. boiling water	Milk or cream

Add oats, mixed with salt, to boiling water; let boil two minutes, then cook in double-boiler one hour. Strain, bring to boiling-point, and add milk or cream to meet the needs of the case.

REVIEW QUESTIONS

1. State the points that are essential to remember when preparing an invalid's tray.
2. Into what classes may diets for invalids be divided?
3. Make a day's menu for a patient who is in bed with a bad cold. What type of diet is this?
4. What foods should be eaten when one is troubled with constipation?
5. State several ways in which milk may be served to invalids living on a liquid diet.
6. State several ways in which egg may be served to an invalid living on a soft diet.
7. Why are milk and eggs important foods to use in invalid cookery?
8. Should a large amount of meat be used in an invalid's diet? Why? Name some kinds to serve and ways of preparing them for an invalid on a soft-solid diet.
9. Where can junket tablets be purchased?

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